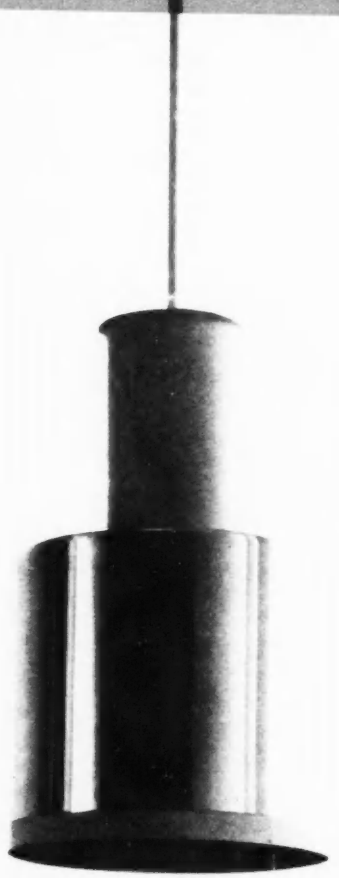
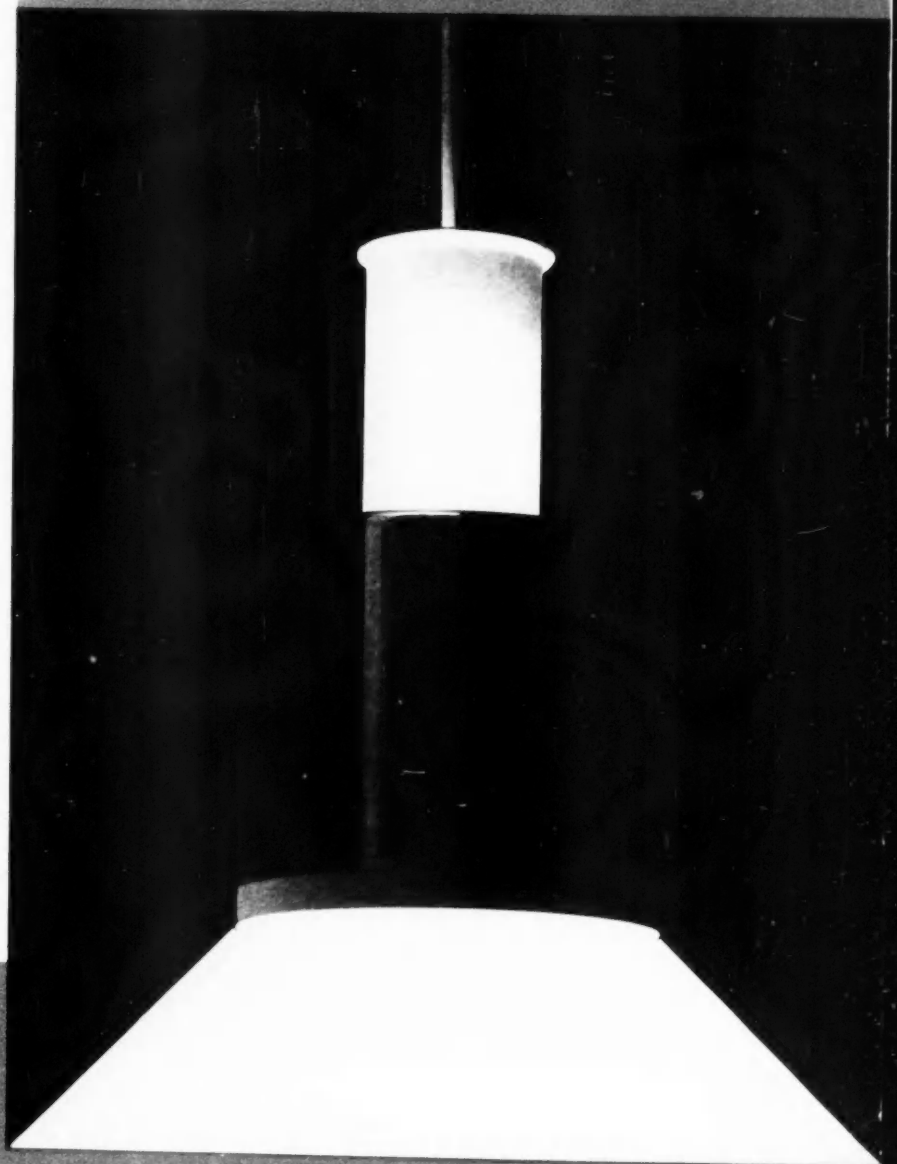
Design

Council of Industrial Design 137 May 1960 Price 3s





WALKER

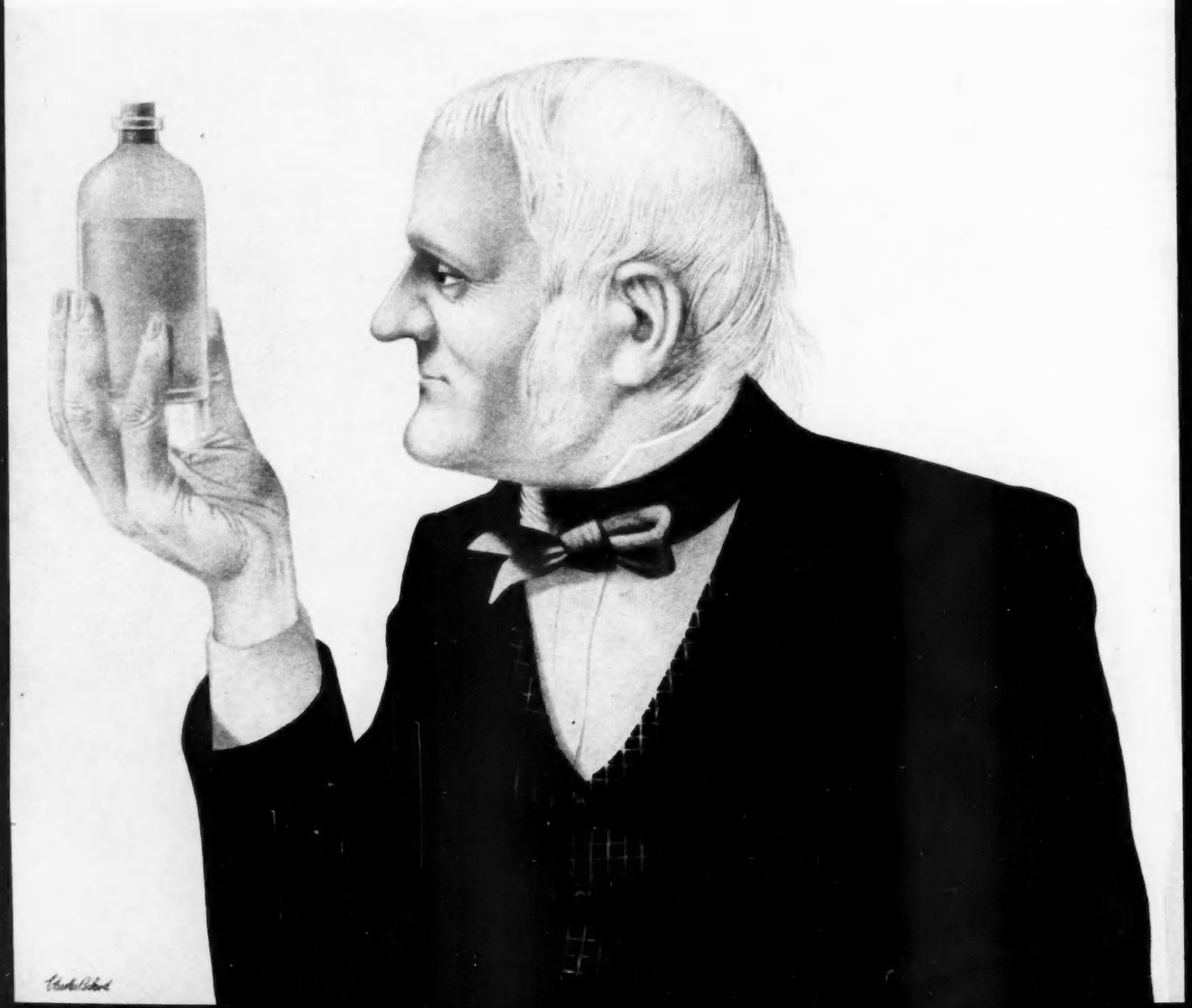
ANCESTORS OF AN INDUSTRY

JOHN DALTON was the first to propound, in 1808, the theory that the atom was the smallest particle of matter imaginable—a theory that was not assailed until more than a century later. A similar theory had been put forward by Democritus two thousand years earlier, which was restated by Newton one hundred years before Dalton. Where Dalton excelled was in formulating these theories in a way that explained known chemical processes and enabled deductions to be made which could be submitted to the test of practical experiment. All matter, said Dalton, is composed of a great number of extremely small particles or atoms. It is impossible to conceive the number of particles in all matter but if the subject is limited—say, to a given volume of a gas—it is clear that the number of particles must be finite. Chemical analysis and synthesis do no more than separate atoms one from another, and reunite them. In other words, atoms are indestructible and cannot be created. Dalton also held that it was possible and important to ascertain the relative weights of different atoms, and he carried out experiments to this end.

Dalton's theory, unaltered in its essentials, is still used to explain the laws of chemical combination

ICI

The same curiosity
that inspired the
ancestors of their
industry leads
I.C.I.'s scientists
and technologists
towards the discovery
and development
of new materials
and improved processes.



Enter—a breathtaking advance in bathroom luxury

Daring advances in architectural design have found expression in recent years. And now–at last–a single idea heralds a new era in bathroom design.

This bold conception, inspired by Formica Ltd–the VANITORY UNIT–can combine in one space-saving advance, handbasin, taps, dressing table drawers, mirrors, towel rail, strip lighting... beautifully surfaced in the colourful range of Formica decorative laminates... all so easy to keep clean.

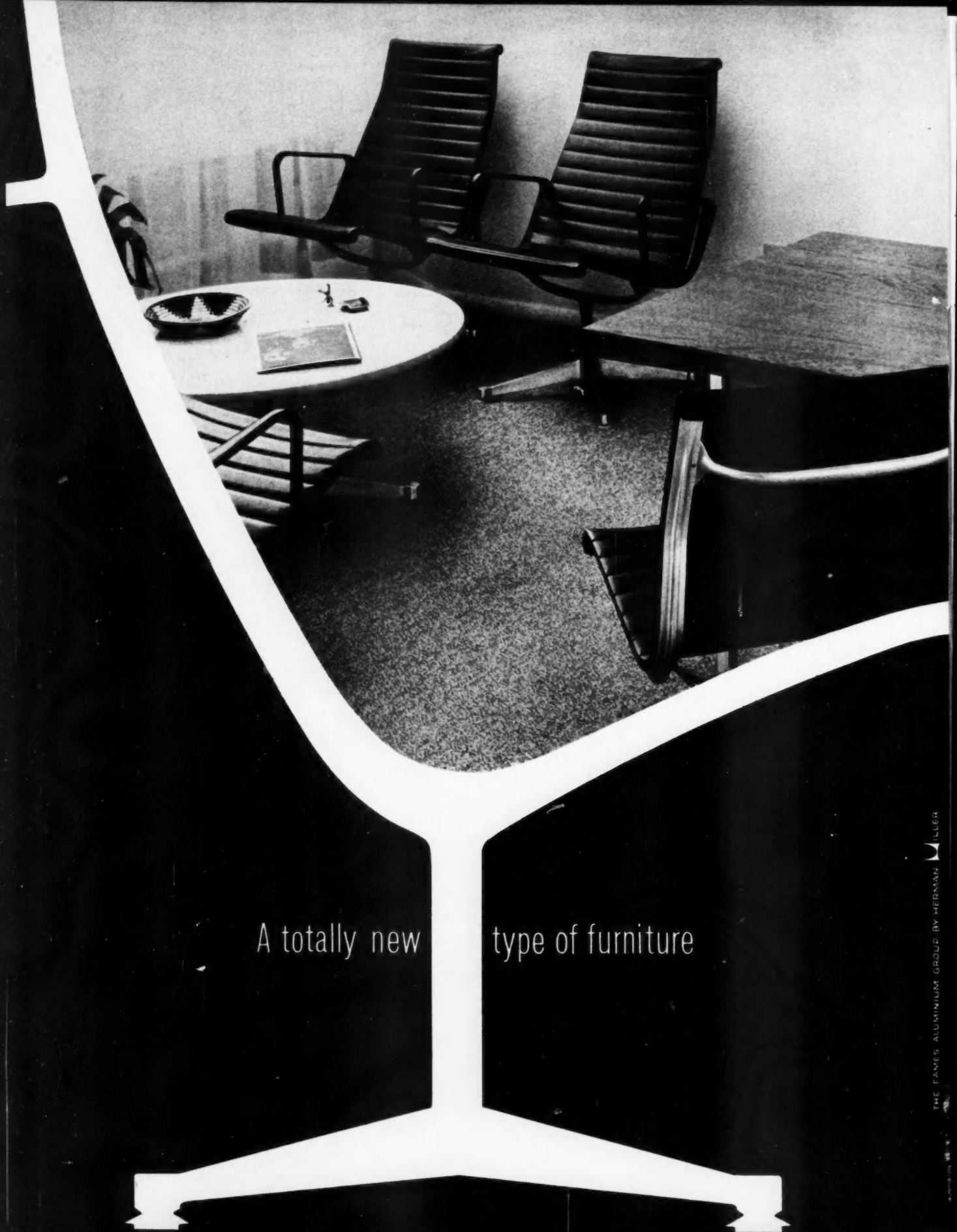
With Formica decorative laminates you can design your own Vanitory Units to blend exactly with your overall plan... or you can choose from a wide range already produced by over 40 manufacturers. Full information and lists of manufacturers are freely available on request.

FORMICA* reg. VANITORY* units

FORMICA–THE FINEST OF ALL THE DECORATIVE LAMINATES

FORMICA Ltd, De La Rue House, 84/86 Regent Street, London, W.1.

*FORMICA and VANITORY are registered trademarks


A totally new type of furniture
THE EAMES ALUMINIUM GROUP BY HERMAN MILLER

POLISHED ALUMINIUM AND A NEW UPHOLSTERY PRINCIPLE—

pads of plastic cloth or fabric are held in tension between moulded aluminium frames that conform to lines of comfort. All stand firmly on plastic-footed bases of aluminium. All swivel, and the reclining chairs have a simple tilting adjustment. Lounge and reclining chairs can have arms of black or polished aluminium; and the complementary luxuries of ottoman and pillow. Companion circular coffee and dining tables are topped in Botticino marble or opaque white glass. The whole group is intended to serve equally well indoors and out, in homes, offices and reception areas. Their originality is matched only by their comfort and practical applications; this is a well-conceived new idea that works. Retail prices range from £24.6.6. for the ottoman up to £62.5.6. for the reclining chair with pillow. The Eames Aluminium Group is being made now by Hille, under licence to Herman Miller of America. Visit our showrooms, 39/40 Albemarle Street, London. W.1., Hyde Park 9576, or 24 Albert Street, Birmingham 4. Midland 7378, or write for brochure.

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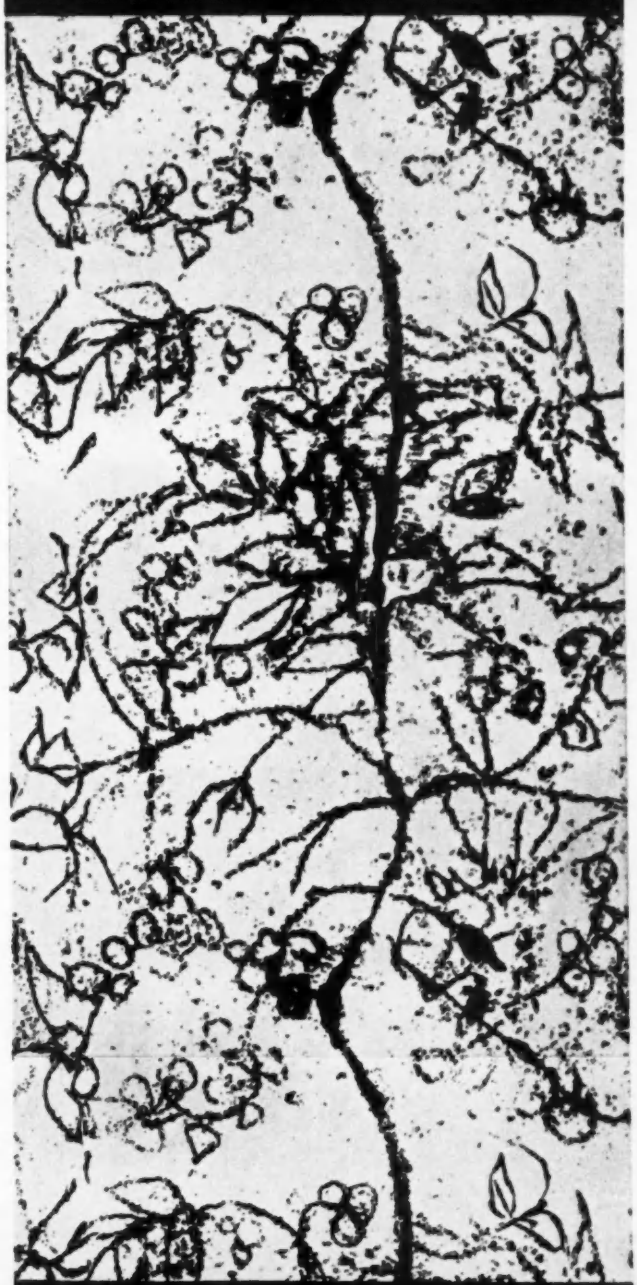
PALLADIO



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The finance of industry in all the multifarious forms it takes in a community as complex as ours is a very substantial part of our business, and it is proper that money should be in the forefront of the picture. We take pride in our share in industrial enterprise, but our part is primarily a financial one; for after all, our business is money.

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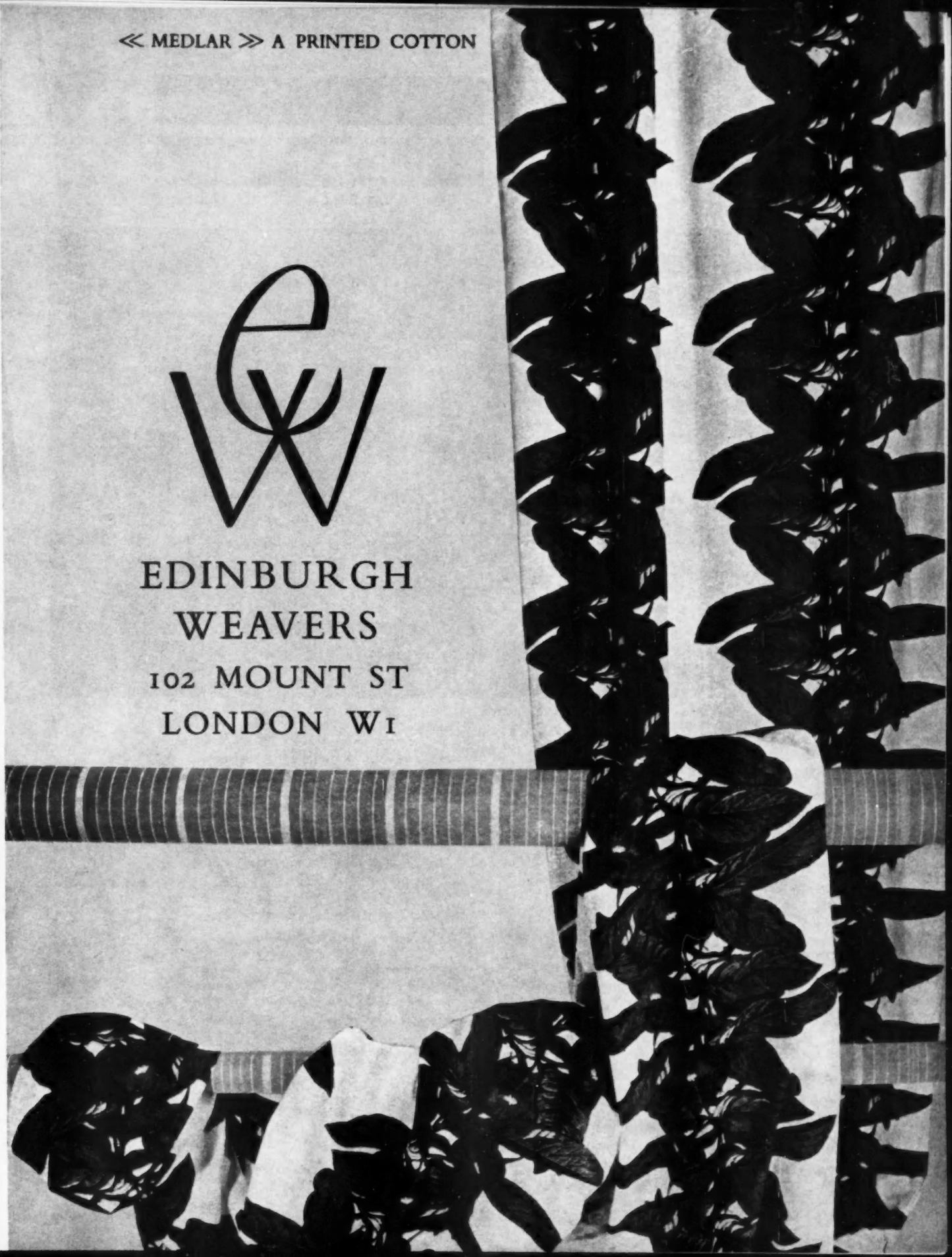
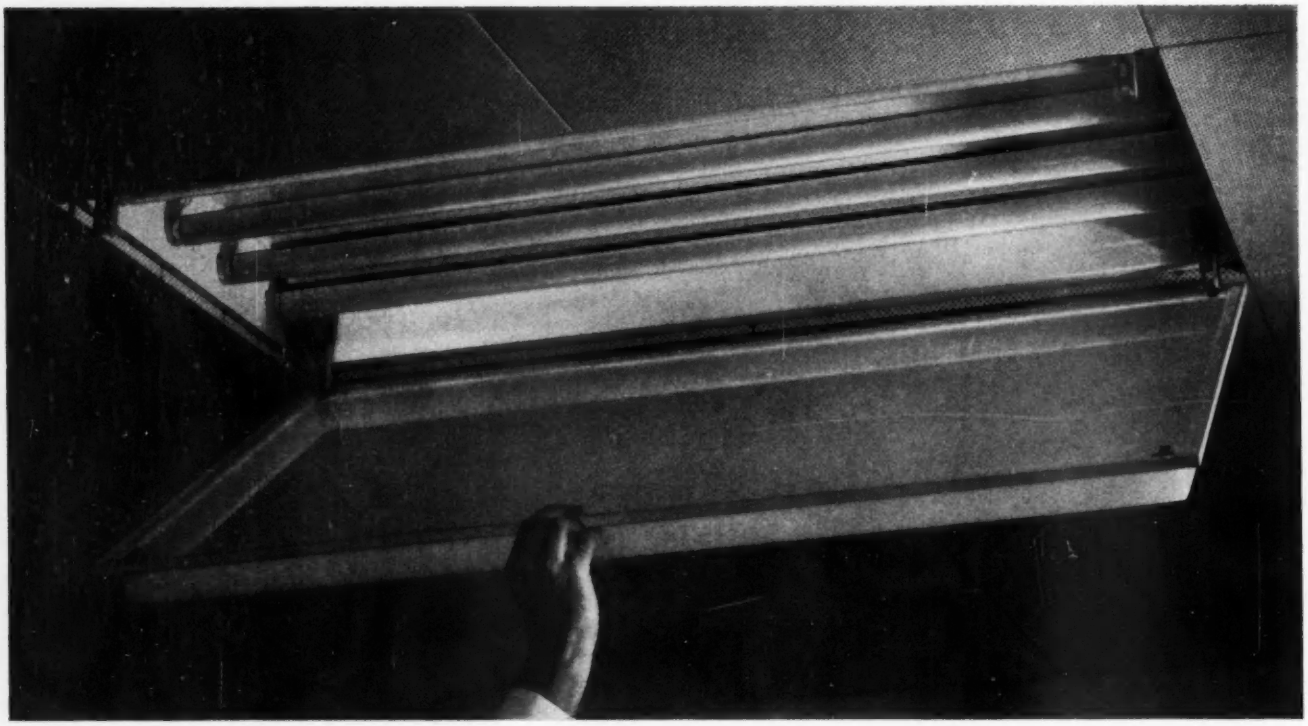


ALLOM HEFFER

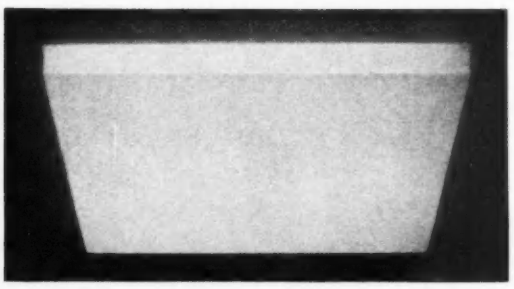
AND COMPANY LIMITED



The recessed fittings illustrated are made in various sizes and incorporate a completely new method of securing simple maintenance by means of the Allom Heffer patent locking device (Patent application No. 32933/59) which provides :

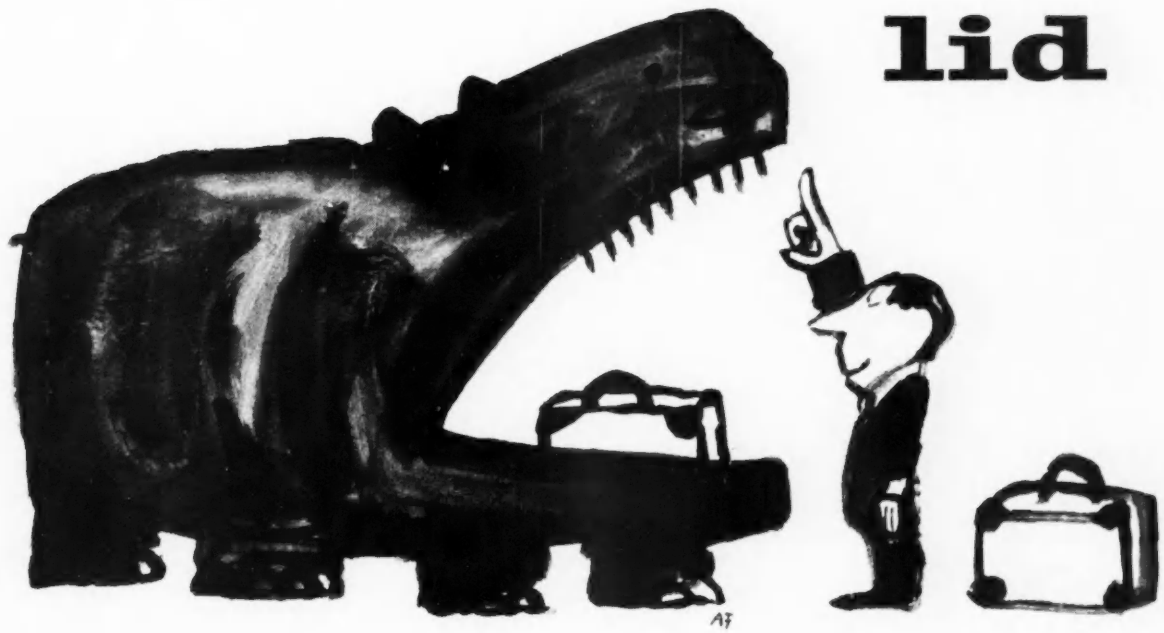
- A positive method of opening and shutting on a pull-push principle.
- Hinging on either side of the fitting when fully clear of the ceiling.
- Complete detachment of the diffuser when required.

Apply for Brochure series 707



17 MONTPELIER STREET · KNIGHTSBRIDGE · LONDON · SW7 · TELEPHONE KNIGHTSBRIDGE 6897-8

You lift lid



Bonnet lid, or boot? Boot!
Inside see spanner, jack. Old newspaper, gardening glove lurking.
Dead match, dead mouse, dead resolution. Alas.

Nobody looking . . . lift lid again.
Click, whoosh. Why so light? Why so smooth firm easy?
Counterpoised. Contra-balanced. Cantilevered. Spring assisted.
When up, up. When down, down.
When only half-way up, neither one nor tother.
Wilmot Breeden research. Clever.

Boots, boots, boots, boots, movin' up an' down again.

Be serious. When up, up. Kick, shout, bang with clenched fist . . . Stays up.
Cardinal virtue. When downing simple routine.
Lift and lower (telescopic support).
Or press and lower (spring-loaded hingery).
All types. All Wilmot Breeden. Click!

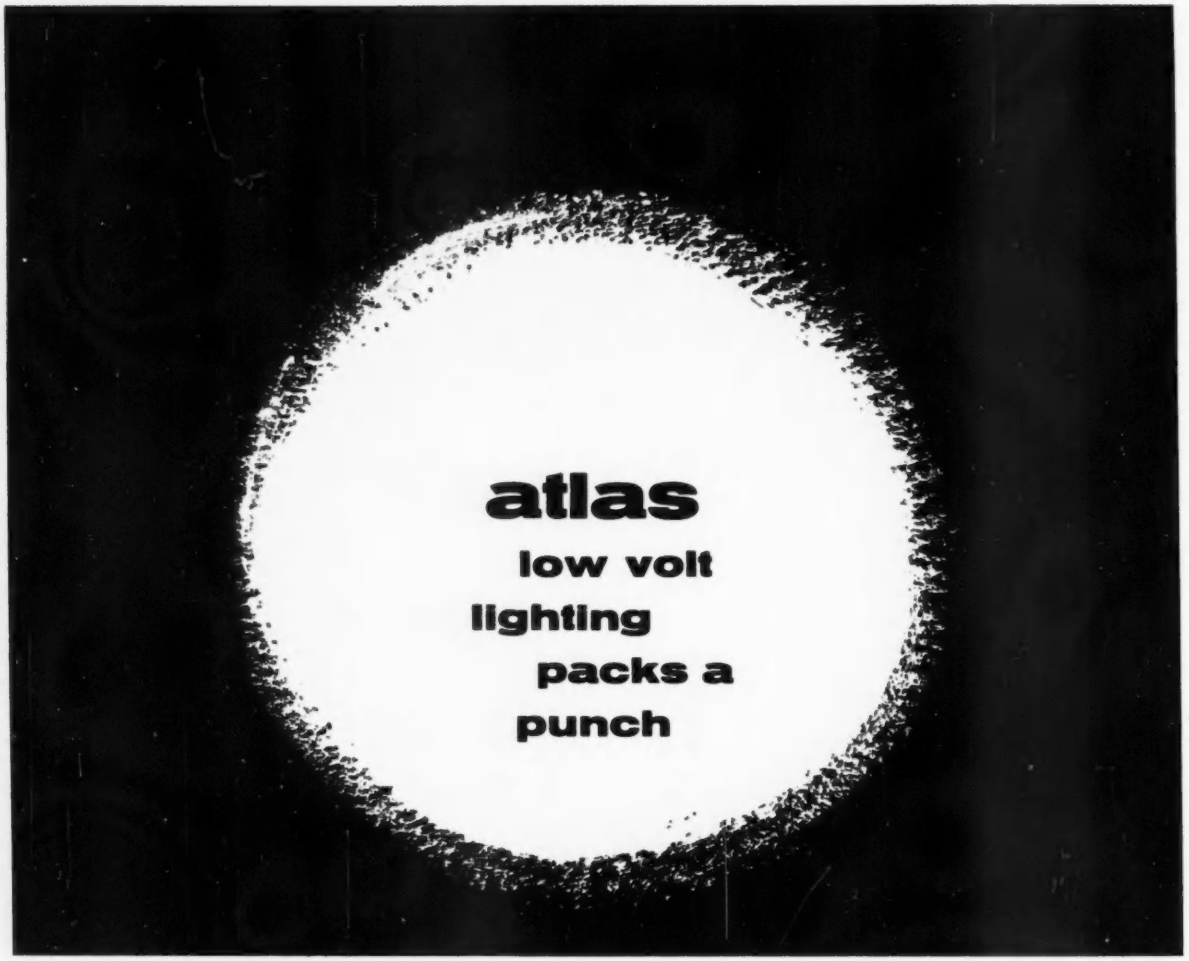
Some day, clear out boot. Must. Burn paper. Bury mouse.
Meanwhile thank Wilmot Breeden smooth, light, easy, not chop fingers.
Boot-supports. Boot locks, too. Bumpers. Door locks, mechanisms.
Window winders. Wilmot Breeden. Radiator grill, maybe? May well be.
Good.

Virtually every British car roads today some Wilmot Breeden components.
Oh, good. (Mem: bury mouse.)

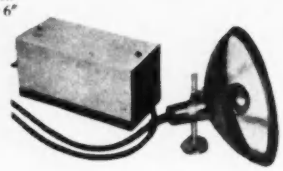
Wilmot Breeden

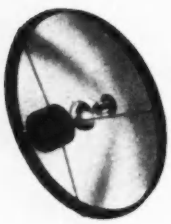
Birmingham, London, Manchester, Bridgwater, Paris, Melbourne

● *Reprints of previous advertisements in this series can be obtained upon request to Advertising Dept., Wilmot Breeden Ltd., 13-14 Oxford Street, Birmingham 5*



DB/0050 12 volt 50 watt.
Dimensions: Diameter 6″
Overall length 4¾″
Pillar height 4″.



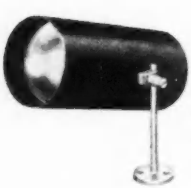


DE/0150 24 volt 150 watt.
Dimensions: Diameter 14″
Overall length 8¼″.

The Atlas range of low voltage lighting fittings provide the 'punch' spotlighting so necessary to give accent in today's higher *overall* levels of display lighting. Now, with this series of extremely small lamps and fittings, dramatic lighting effects and changes of tone colour can be achieved in even the brightest display layout. Amongst the additional advantages of Atlas low voltage lighting are: neat design and appearance, greater *control* of light, smaller wattage and reduced heat radiation, low operating and maintenance costs, and compact transformer design. The range includes a series of adjustable fittings, interchangeable colour filters, and a high intensity floodlight for internal and external use. For full details please write to: ATLAS LIGHTING LIMITED, Thorn House, Upper St. Martin's Lane, London, WC2.

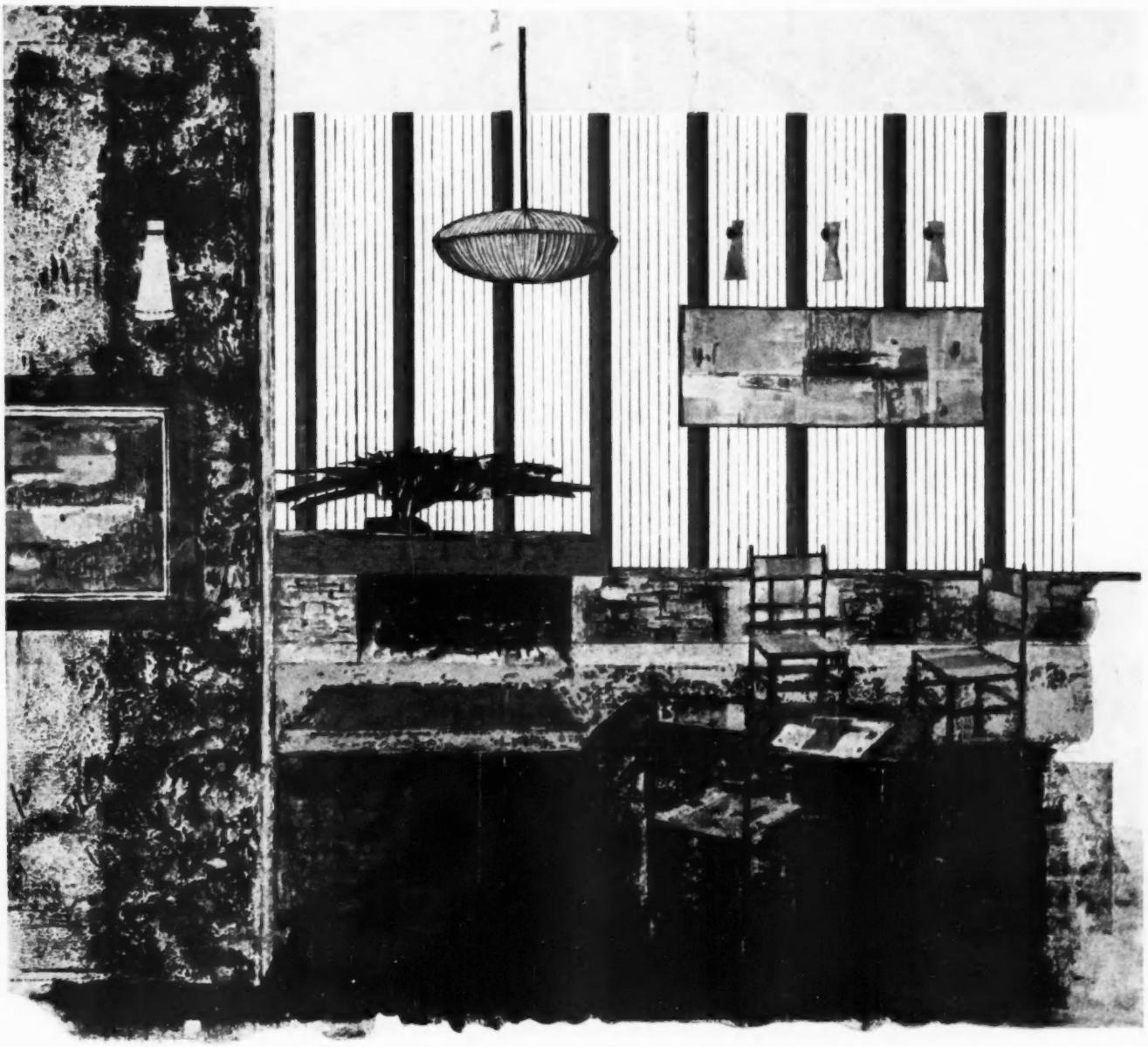
DA/0050 12 volt 50 watt.
Dimensions: Diameter 2¾″
(Lamp diameter) Overall
length 4″ (inc. lamp)
Pillar height 4″.

DAM/0050 12 volt 50 watt.
Dimmerstats:
Diameter 2¾″
Overall length 5¾″
Pillar height 4″.



DC/0050 12 volt 50 watt.
Dimensions:
Diameter 2¾″
Overall length 5¾″
Pillar height 4″.

DTV A293



Our artist William James depicts Palladio Magnus wallpaper " Linea " No. 44448 as used in a club. You are invited to visit our spacious showroom on the 1st Floor and to make use of the improved facilities of our special advisory service at

WPM MORTIMER STREET

FOR ARCHITECTS CONCERNED WITH THE SPECIFICATION OR DIRECTION OF DECORATIVE SCHEMES
THE FOLLOWING COLLECTIONS ARE AVAILABLE

PALLADIO HAYWARD THE ARCHITECTS BOOK

THE ARCHITECTS' DEPARTMENT THE WALL PAPER MANUFACTURERS LIMITED
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OR KING'S HOUSE KING STREET WEST MANCHESTER 3

"Twitterton! Is this really FORMICA*?"

Can it really be? Plastics piping made by FORMICA? Actually FORMICA is the name of a Company who manufacture a great many first rate products, including their famous surfacing material FORMICA decorative laminates. Plastics piping for instance. FORMICA's plastics piping has overcome every major disadvantage of metal. And the other FORMICA extruded plastics products too, are opening exciting new projects every day; FORMICA plastics containers for attractive see-through packs for toothbrushes and cosmetics . . . FORMICA extruded rod for shock-proof screwdriver handles.

If you're interested in any type of extruded plastics be it piping, containers or rod, please write for full information . . . . . and remember . . . . .

FORMICA make

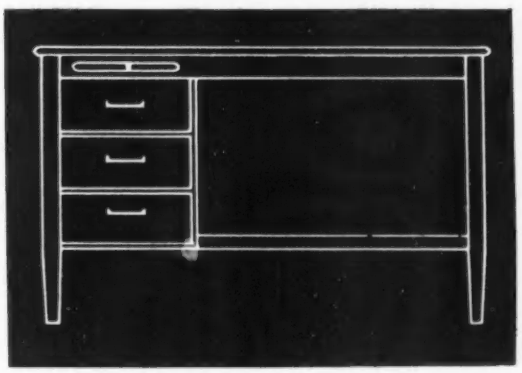
DECORATIVE LAMINATES
INDUSTRIAL LAMINATES
EXTRUDED PLASTICS
CHAIR SETS

For full information on any FORMICA product please write to:
FORMICA LIMITED, Extruded Plastics Division, Cavendish Works, Buckhold Road, Wandsworth, S.W.18. Tel: VANdyke 7202

**FORMICA is a registered trade mark*

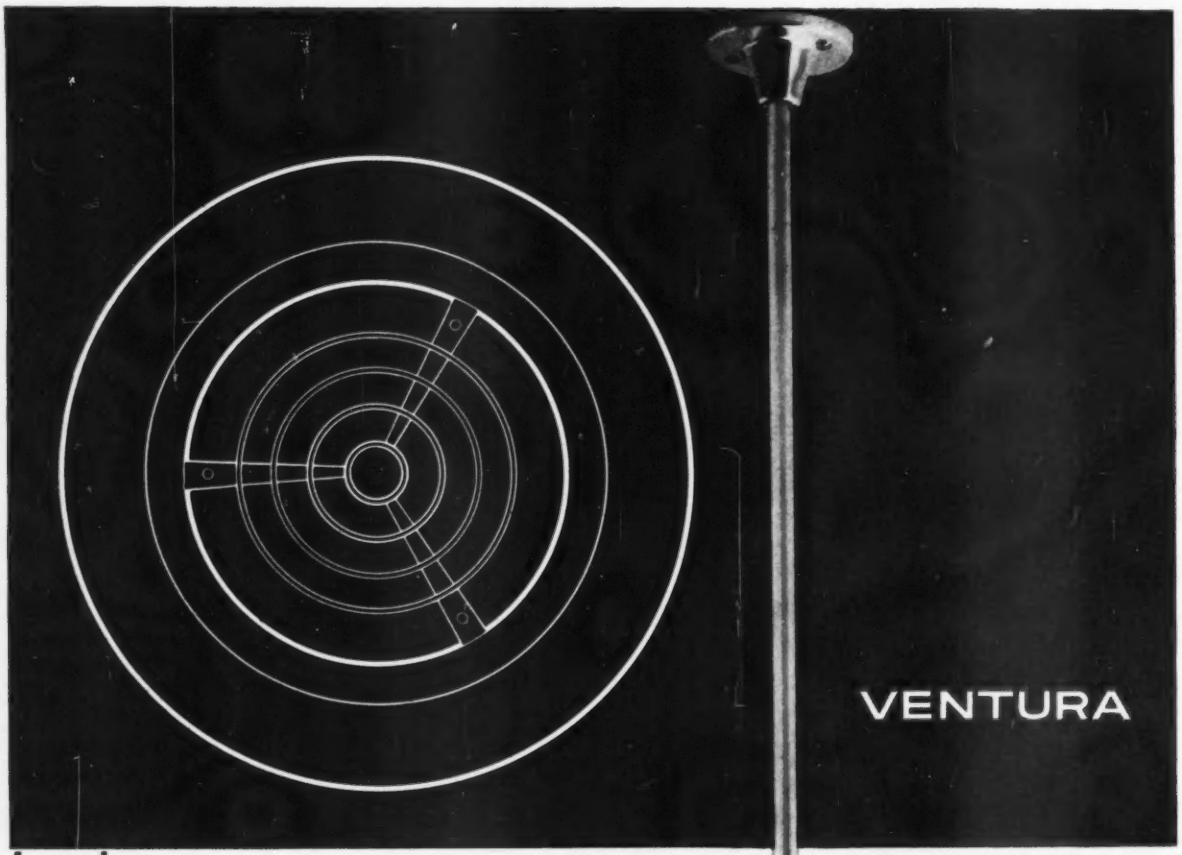
LM Furniture produces a wide variety of standard pieces including 20 chairs, tables and three ranges of desks designed to satisfy the need for high quality furniture for the Board Room, the typist and all levels in between. All LM Furniture has been accepted by the Council of Industrial Design for inclusion in Design Index. Recent contracts include furniture for: S. H. Benson, Constructors John Brown, Ind Coope, Ionian Bank, Lloyds Bank, Mullard, Penguin Books, Van den Berghs & Jurgens, Vernons Pools, Walker & Hall, Ministry of Works for a number of Embassies, Residences and Consulates overseas.

Tom Lupton, MA AADip MSIA, John Morton, ARIBA AADip MSIA designed the furniture which is made by LM in their factory at Wallingford in Berkshire.



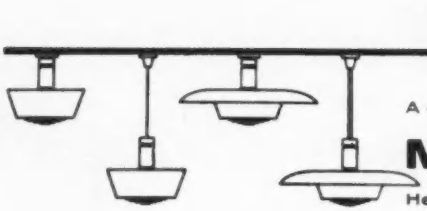
LM Furniture

LM FURNITURE LTD 63 DEAN STREET LONDON W1 TEL REG 1848



logic

The Ventura series by Merchant Adventurers Limited provides architects and engineers with a range of twenty lighting fittings designed with logical simplicity to fulfil a variety of common lighting needs. They give general lighting with a high degree of diffusion and with no disturbing glare. Moulded in white opal translucent plastic, the diffuser has an open top for shadowless ceiling lighting. The open louvred aperture gives virtually uninterrupted downward lighting while shielding the bare lamp from all normal viewpoints. Prices from 19/2d. including P.T.

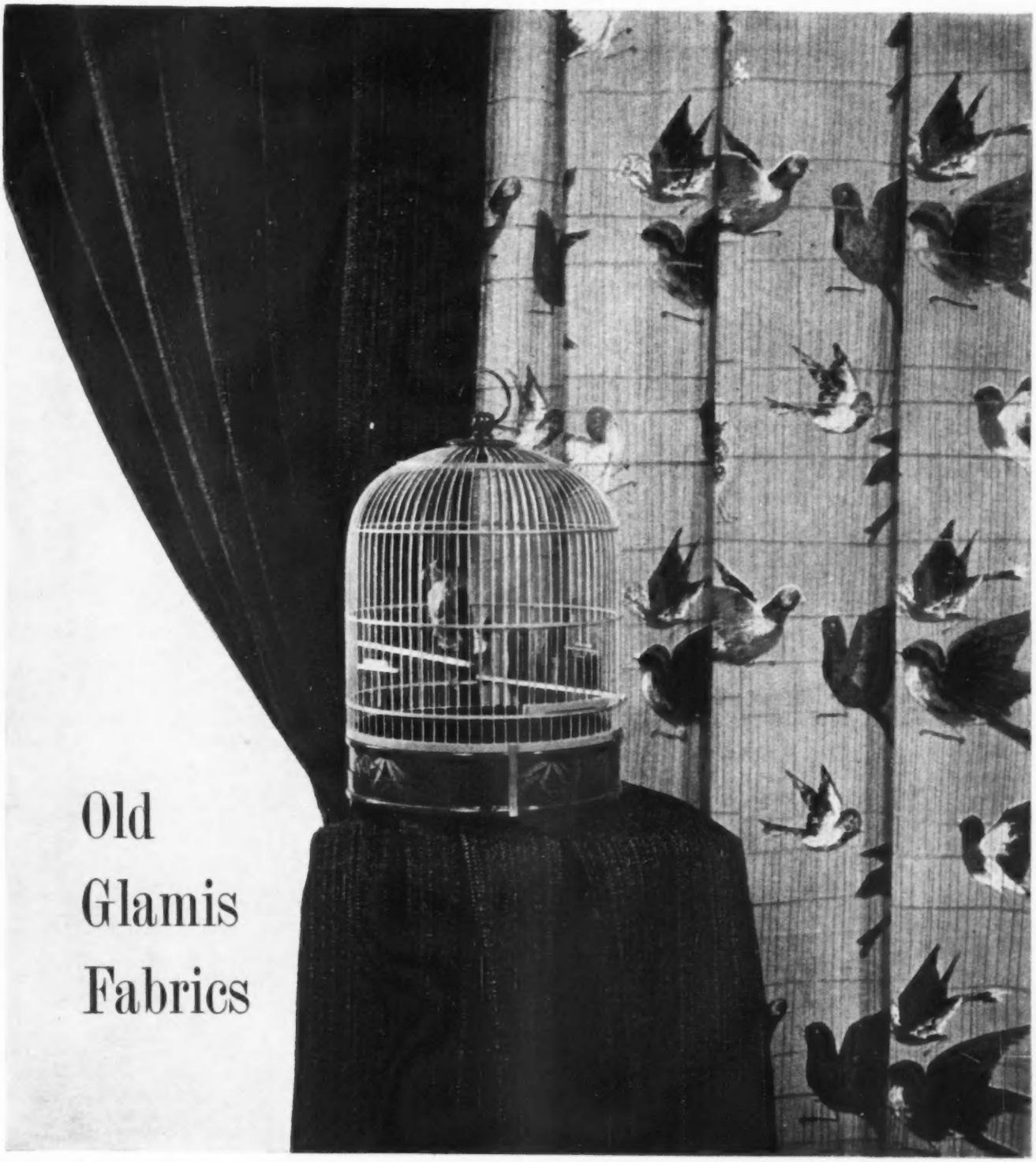


MA

A comprehensive leaflet giving full data and prices is available on request.

Merchant Adventurers Limited

Head Office: Hampton Road West, Feltham, Middlesex. FELtham 3586
London Showrooms: 43, Portland Road, London, W.11. PARk 1223



Old Glamis Fabrics

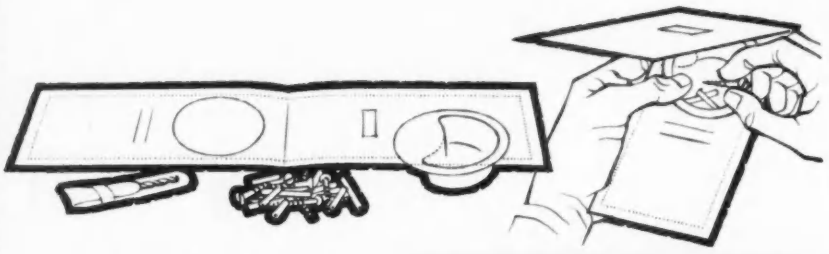
By appointment
makers of Old Glamis furnishing and embroidery fabrics to
H.M. Queen Elizabeth The Queen Mother
Donald Bros. Ltd.

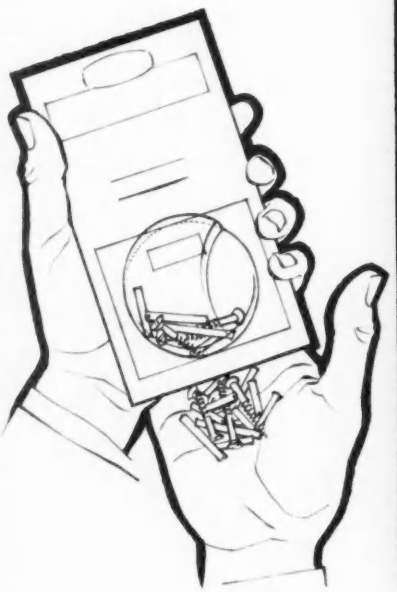
AVIARY, a recent addition to the Old Glamis family, is printed on a satin cotton in a choice of five colour combinations. Here it is teamed with MERKLAND, a heavy upholstery fabric made in ten colourings. Ask to see the pattern books of the Old Glamis range at your local furnishing store or visit the Old Glamis showrooms in London or Dundee. You will be a welcome visitor.

OLD GLAMIS
FABRICS

ROXBURGHE HOUSE, 287 REGENT STREET, LONDON, W.1. TELEPHONE: MAYFAIR 1126/7
THE OLD GLAMIS FACTORY, DUNDEE. TELEPHONE: DUNDEE 85263/4

Bexfilm





THE BASIS OF NEW IDEAS FOR *Windopaks* BY JOHN DICKINSON & CO. LTD

Strong, exceptionally clear, easy to fabricate, Bexfilm opens up new avenues in Design. Windows, transparent sides and complete transparent packs—packs which protect the goods and do a strong selling job—all the time.

A good example is this new *Windopak* designed and produced for the Rawlplug Company. Bexfilm acetate film is used here for the crescent-shaped bubble which gives the pack a dual purpose as a display and as a handy container and dispenser after sale.

The bubble is free to revolve in the card, which is folded and stuck, at the edges only, with latex. This novel construction results in excellent visibility and protection for the product and a very economical price.

For sales appeal plus economy, designers are turning more and more to Bexfilm. The Technical Service Department of BX Plastics will be happy to assist you in the production of progressive packaging ideas.

For further details of the latest in individual *Windopaks* write to John Dickinson & Co. Ltd., Card & Board Department, Apsley Mills, Hemel Hempstead, Herts.

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Cellulosics Sales Division, Manningtree, Essex. Telephone: Manningtree 401

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WEBBING FIXING
● PAT. No. 800.828

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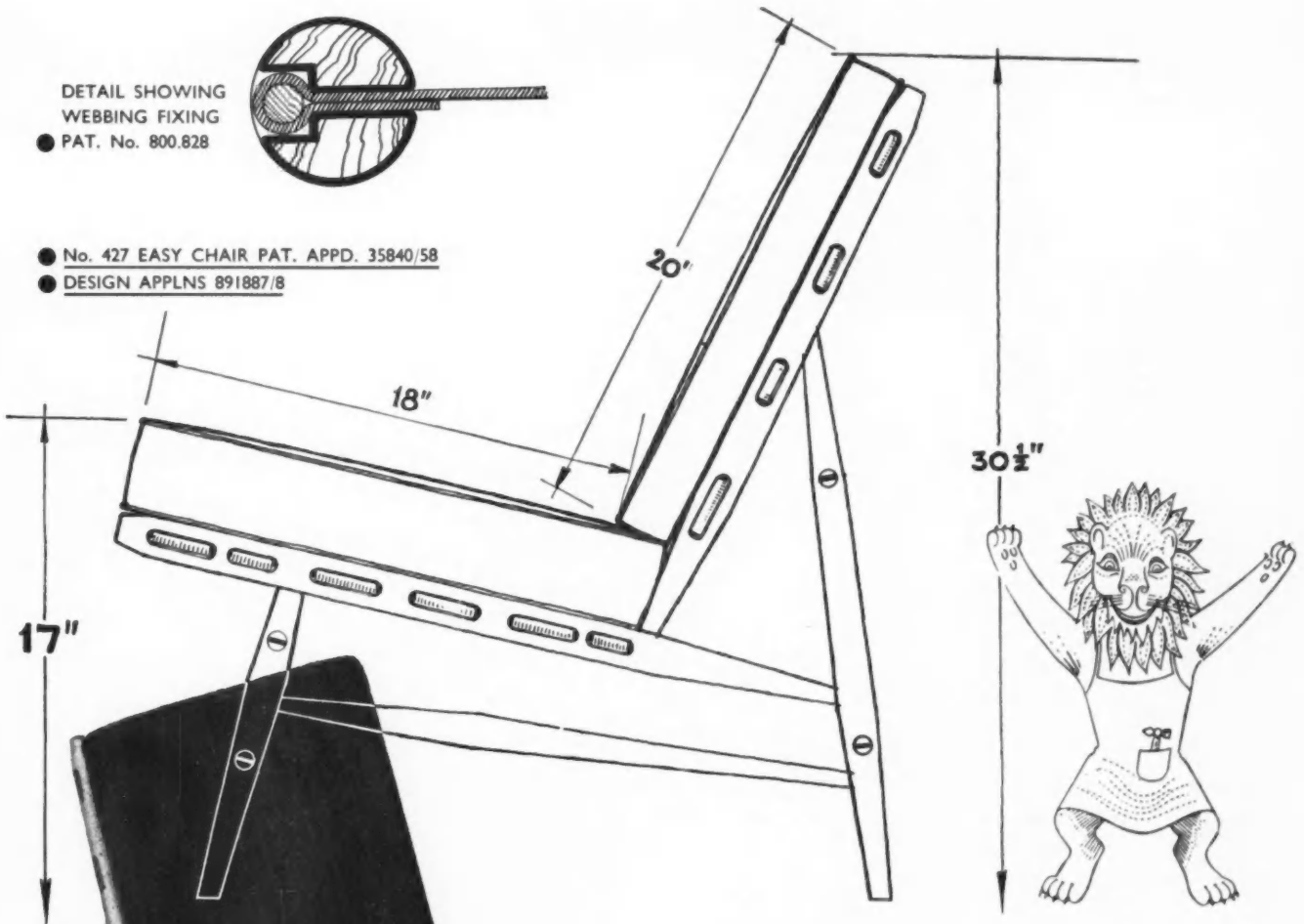
● DESIGN APPLNS 891887/8

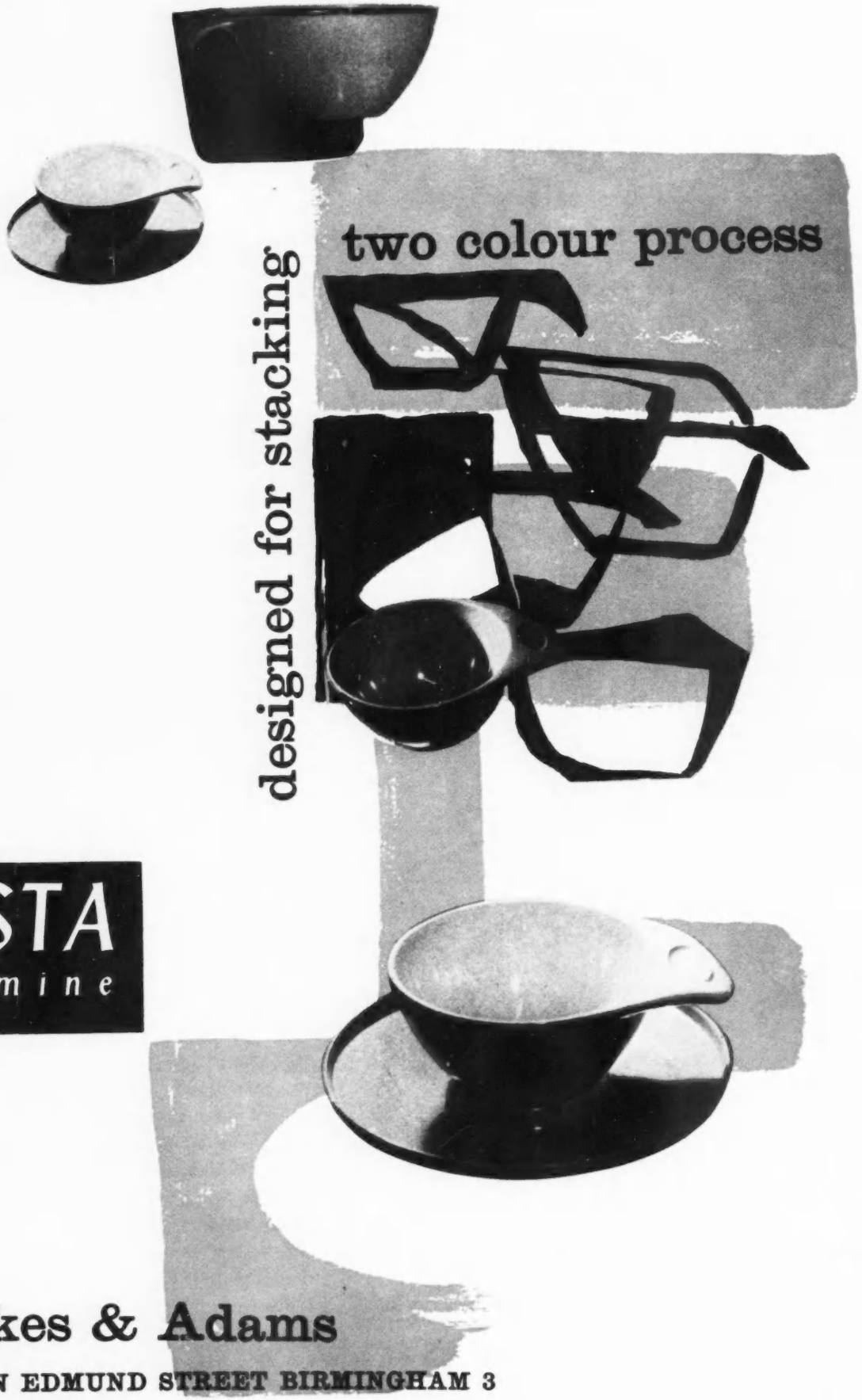


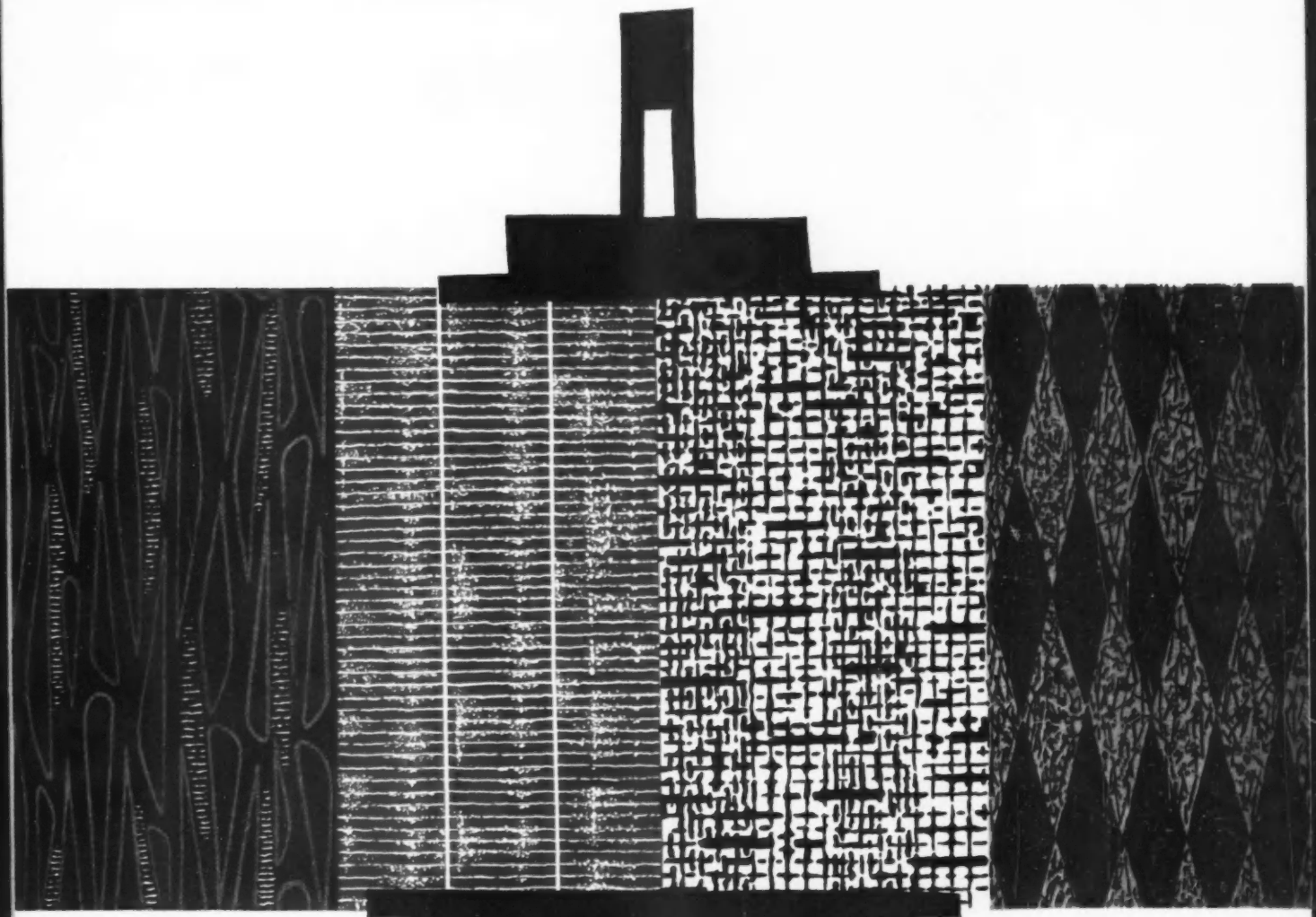
The ERCOLion on the anatomy of comfort

"Design for the comfort of the anatomy" began the ERCOLion, "is an amalgam of science and aesthetics. A marriage of form and information. A means of support without obtrusive supporting means. Take my new light but immensely strong Easy Chair. The entire sitting area of the seat and back is completely free of any cross rails. Just resilient rubber webbing (self anchored to the solid Beech frame), supporting deep foam cushions. A hammock-like haven which 'gives' to your body at every point. However you dispose your anatomy you are superbly comfortable as never before, because you are literally 'free-floating'. And as an additional practical comfort", concluded the ERCOLion, "I have provided zip-off cushion covers".

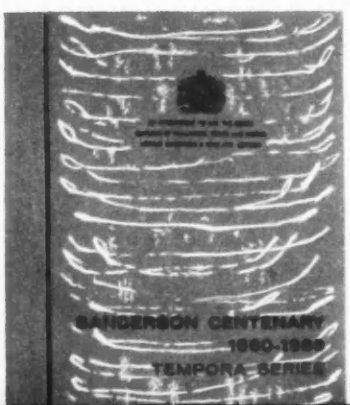
ERCOL Windsor contemporary furniture

ERCOL FURNITURE LTD · HIGH WYCOMBE · BUCKS


two colour process
designed for stacking
FIESTA
melamine
Brookes & Adams
EIGHTEEN EDMUND STREET BIRMINGHAM 3



THE SANDERSON TEMPORA SERIES



The Sanderson Tempora Series brings modern design in wallpaper into the popular price range. Here is a selection of brilliantly inventive designs in a thoroughly contemporary idiom. Many are by young prizewinners in the recent Sanderson Centenary Competition, for which entries were received from all round the world. Thus the series has an international standard in design and represents a highly important development in the ever-broadening field of decoration.

ARTHUR SANDERSON & SONS LTD., BERNERS STREET, LONDON, W.1

and at **Glasgow, Edinburgh, Leeds, Manchester, Birmingham, Leicester, Exeter, Bristol, Southampton and Brighton.**

This office is furnished with items from the Abbess Pre-eminent Series and Abbess Seating Range, which may be seen at Stand No. 81, Business Efficiency Exhibition, Birmingham 16th – 21st May.

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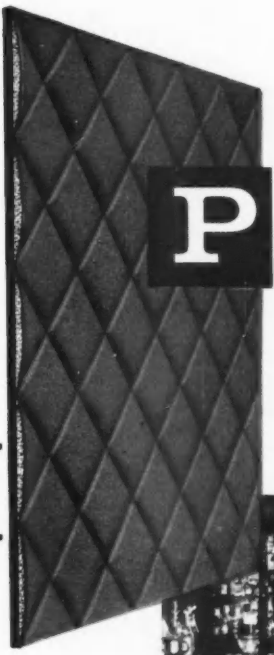
EQUIPMENT

Full details from appointed Abbess distributors or direct from the sole manufacturers Abbott Bros (Southall) Ltd., Abbess Works, Southall, Middx. Telephone: SOUthall 1357 Cables: Abbess, Southall.

New, New, New, New!



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the *new medium* for low-cost decorative treatments!

PANIQUIL Padded and quilted P V C. on hardboard

PANIQUIL means more than a new material . . .

PANIQUIL means a *new approach to décor*

Plastic foam and textured P.V.C. cloth have been cleverly combined on a rigid yet flexible hardboard base. The result: a *quilted panelling* that sparks new décor ideas for shopfitting, interior decoration and displays.

And these ideas are carried out at little cost . . . with little effort . . . for Paniquil is applied with all the speed and ease of ordinary hardboard.

These pictures help to show the range—the scope—the versatility of this new medium. You, too, can put Paniquil to work in a hundred different ways.

Individual treatments made easy by Paniquil's many colour/design combinations. Ask about the Paniquil range of warm, appealing colours—available in diamond, squared and fluted designs. In addition to the varied standard range, other colours can be provided to meet special requirements.

WASHABLE, HARD-WEARING, *Ideally suitable for:*

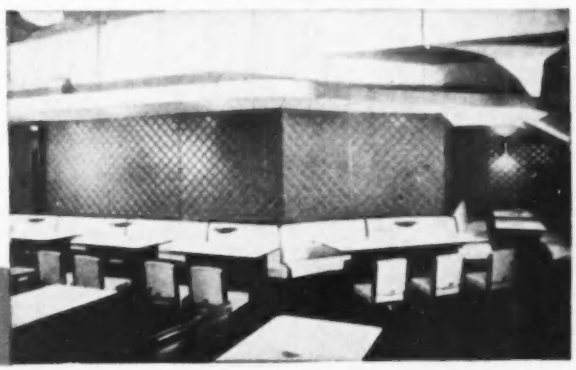
* **Interior decoration** * **Shopfitting**
* **Caravan, ship and aircraft interiors and similar applications**

For samples, full details and trade terms write to:

Paniquil used in existing panels modernised this Royal Air Force Association bar.

Paniquil enhances the design of this Hairdressers' Salon Reception Desk by Osborne, Garrett & Co. Ltd.

Bettafoods (London) Limited, where Paniquil provides distinctive wall treatment.



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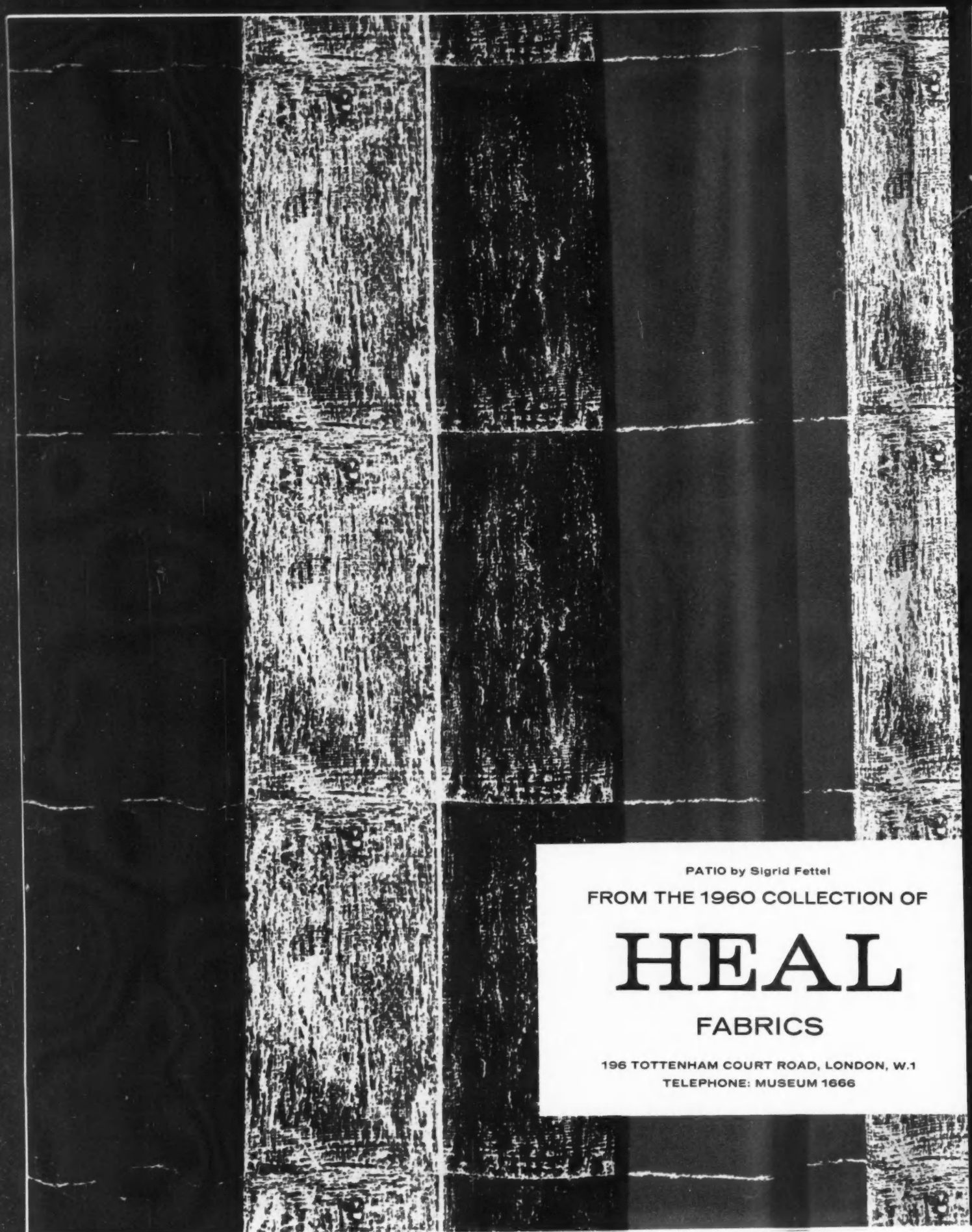

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137 May 1960

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J. Noel White
Michael Farr
ART EDITOR *Kenneth Garland*
ASSISTANT EDITOR *Malcolm J. Brookes*
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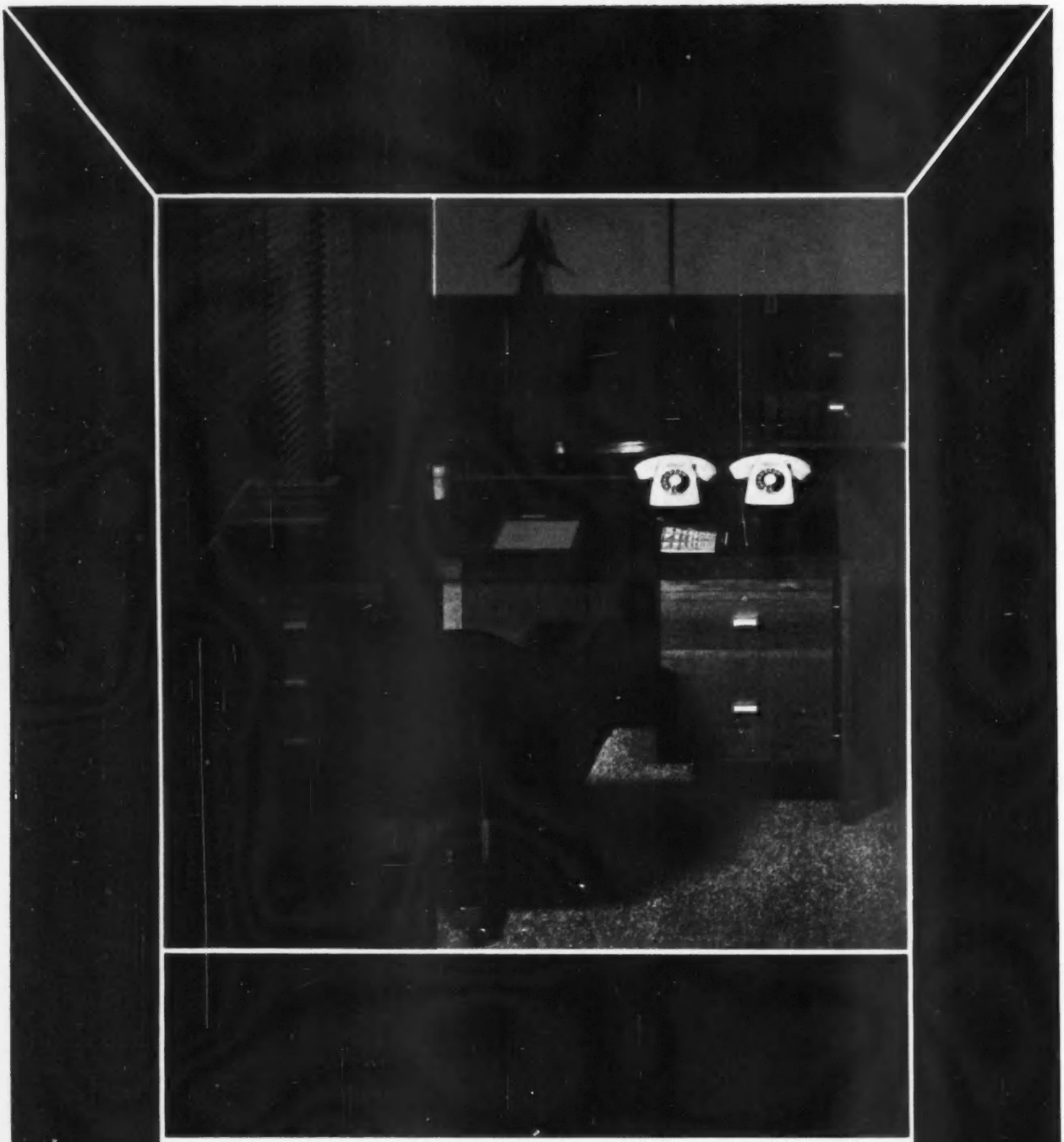

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Definitions of good design

The most overworked and in some ways the most frustrating question in the field of design is the old chestnut: "What is good design?" It is the first to crop up after any lecture and is usually met by a handful of rules of thumb, such as 'fitness for purpose', 'proper use of materials', 'economy of manufacture' and 'ease of maintenance'.

There is nothing wrong with these hallowed catch phrases. They have done sterling service in the past and will do so again, but, as an article in this issue suggests, they provide only part of the answer. In a changing world that is daily more enslaved to production and sales, other values must be allowed their claim. It is not by coincidence that consumer research and consumer protection have become live issues at this time. Impersonalisation of production breeds its own antidote. The consumer re-asserts himself. Fitness for purpose must today also comprise fitness for person, and the new science of ergonomics has arrived to ensure that it does. Economy of manufacture dare not ignore ease of distribution which in turn implies the hitherto rather suspect notion of sales appeal. Popular preference is becoming a yardstick in its own right, for it is now supported by its own new sciences of market and motivation research. Status symbolism and social aspiration have become major factors in design policy. And on top of all these changes comes automation with all that it implies for the manufacturer seeking steady future outlets for his product. Must the consumer now be tailored to suit the product as well as vice versa?

It is these questions that have prompted the simple analysis of good design attempted in this issue, for never have more people been so interested in design and never has good design been so nearly within reach of so many.

It is also appropriate to discuss these problems in the month when the *Design Centre Awards 1960* are to be presented, for these are intended to be illustrations of good design today. Do they in fact measure up to the definitions offered by Bruce Archer? They have each been chosen to show some outstanding quality, whether imagination, efficiency, economy or careful detailing, but all have been chosen to represent the present. Therein may lie the answer to Mr Archer's most difficult question: "What is good taste?". Is it not, in the words of Professor Misha Black, the capacity to see oneself at the end of a historical development? P.R.

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Pointers

Improving farm buildings

The first positive step towards improving the design and siting of farm buildings has been taken in a recent Order to Parliament by Henry Brooke, Minister of Housing and Local Government. The order, requiring planning permission for buildings exceeding 5,000 sq ft in ground area, has been introduced to ensure that such buildings are sited with due regard to local amenities. This is admirable, as far as it goes. But how far *does* it go?

The machinery of control is complex and unwieldy, and its application requires a quality of imagination that may be too much to expect from a rural district council already burdened with other duties. On the other hand the total number of buildings to be controlled is not likely to be large. In fact farmers and landowners have been exhaling big sighs of relief because they believe that the new controls will hardly affect them at all. Even more important is the design of the buildings themselves, for no amount of siting control is going to disguise an eyesore. And often it is the clutter of small buildings which causes the greatest offence – and these escape control altogether.

Some of these problems were raised by the CoID at a recent conference held by the Ministry of Agriculture's Regional Land Commissioners, where the need to improve design was fully appreciated. It was agreed that a list of approved buildings (similar to the CoID's list of approved lighting columns) would be of great value in raising standards within the industry, as well as providing a useful guide to the farmer. But the issuing of grants could not be conditional on the choice of a building from such an approved list. In the meantime the CoID, with the full backing of the Ministry, was asked as a matter of urgency to continue its efforts to encourage improvement in design by the farm buildings' industry.

Public interest in the subject continues to be strong and no doubt there will be some lively debate when the design of farm buildings is discussed on June 9 at a lunchtime meeting of the Design and Industries Association.

Education in human factors

It is not every industry which is fortunate enough to have such a progressive and far seeing body as the Furniture Development Council to act as a source of information and guidance. Under the directorship of Jack Pritchard the FDC has carried out some useful research in the past few years and has been particularly concerned in leading the industry away from its rule of thumb methods towards a better understanding of logical and scientific approaches to design and construction. Its recent conference on *The Scientific Approach to Comfort* (reported on page 67) took this programme a stage further and, in spite of some peculiarly myopic criticism from a few delegates, can hardly fail to stimulate more experimental work in the furniture industry.

One thing the conference demonstrated very clearly was that there are broad areas in design where a lot more knowledge is required, and that existing knowledge needs to be spread far more widely than it is at present. It was therefore a particularly appropriate occasion on which to learn that one of the principal speakers, Dr W. F. Floyd, had been asked to head a new department of ergonomics and cybernetics at Loughborough College of Technology. This will be the first department of its kind in a British technical college and will provide a much needed opportunity for engineers and designers to acquire a basic appreciation of human factors in their work. Initially Dr Floyd will be engaged in post-graduate teaching and research on problems of immediate concern to industry. He anticipates that students will come from varied backgrounds so that an appreciation of ergonomics will gradually be built up at many levels in industry. It is to be hoped that the college will be able to arrange special courses for the industrial design departments of leading art schools, and that individual post-graduate industrial design students will take this chance of extending their education in this important and much neglected field.

Forecast in colour

When Viscountess Lewisham opened a recent exhibition of refrigerators, called the *Top Ten Show*, organised by the Domestic Refrigeration Development Committee, she described how many of the housewives in the homes she visited liked to have plenty of colour in the kitchen. "Looking round the show I see many refrigerators in white", she said. "Why don't manufacturers sell the housewife an unpainted refrigerator and then spray it with the colour she wants to fit in with her décor?" There are, of course, plenty of reasons why this would be impractical, but it does suggest that domestic appliance manufacturers are paying less attention to colour than they could do. After all, the Americans have been selling refrigerators with interchangeable panels of different colours for some time.

An alternative approach is put forward by one American who believes that colour trends and preferences can be analysed and determined on a factual basis. The American, Faber Birren, who is described as a leading colour research authority in the USA, has apparently achieved such good results among his clients across the Atlantic that he is planning to extend his practice to this country.

Mr Birren believes that the personal taste of the manufacturer and designer is no sure guide to success in mass markets and that colour based on aesthetic choice should be replaced by more tangible devices such as analysis of sales records, market study, consumer polls and retail sales tests. Mr Birren, who is not a designer himself, is sure to arouse opposition among the more diehard British designers who will staunchly maintain that colour is *their* business. But what Mr Birren proposes is hardly new. It is normal market research in a rather specialised field – and few designers can seriously question that the more they know about the market they are serving the better it will be for all concerned.

Oglivation of the id . . .

KENNETH J. ROBINSON

In this article the author expresses some (very) personal opinions on a topic which is of great concern to all those to whom design matters. He makes a plea for plain speaking among those who write and talk about design, and we suspect that DESIGN, *and its contributions, are guilty of not a few of the obscurities he criticises.*

"The oglivation of the id is only 1.9 per cent of its total combustible area."

What nonsense! Or is it? Can you be sure that my quotation doesn't come from Ommany's *Approximations*? Can you even be sure there is such a sequilogist as Ommany? And if it comes to that, do you know – without a dictionary – why sequilogy is no longer practised in decent, clean-minded communities?

You may be laughing to yourself in a smug kind of way at my feeble attempt to trip you with Unwinisms. But I'm prepared to bet that your laughter is a little uneasy. None of us is really happy when faced with words or sentences we don't *quite* understand. It's better not to understand at all. That, I suppose, is why so many people seem to find comfort in woolly speakers and writers. If we sit through the usual sort of sermon – a well meant torrent of ill chosen words with a climax that can be identified more by its increase in volume than by its conclusions – we come away with a nice, comfortable feeling that we've done our duty for the week.

If we go to hear a speaker like Charles Eames, in a hall packed with uncritical admirers, we get the feeling that we've been within touching distance of genius. We probably didn't understand a word about that business of our world being "so threaded with high-frequency inter-dependence that it acts as one great nervous system and requires all the feed-back controls man has devised to keep from oscillating itself out of existence". And because we didn't understand it we thought it must be good. If we had been listening to first class speakers, like Sir John Summerson or Sir Hugh Casson, we should have understood what they said well enough to argue about it. They would have seemed like mere men expressing their opinions: not gods descending condescendingly to scatter a few obscure clues about the sources of their genius.

Emotional mystique

Sometimes, of course, it is terribly disconcerting to hear something described in the simplest terms and to realise that you don't understand what's going on at all. For instance when Tom Margerison, scientific editor of the *New Scientist*, spoke to members of the Royal Institute of British Architects a short time ago, he did so with the clarity that puts his paper almost on a par with the *Economist*. But I was bothered for days about his statement that an artificial space satellite would come to a standstill if all the human beings on it went for a brisk walk in the same direction. And I was even more worried by his report that an American had claimed the days were getting shorter because most car drivers in the world kept to the right hand side of the road. I could see this was funny in a very obvious sense. But I knew it was also funny in a sense that I couldn't follow. Here was someone speaking very clearly about something I wasn't trained to understand.

All the more reason, I thought, why we should have clear speaking on subjects that *can* be generally understood. The mystique-jargon that clogs up articles and talks about design is particularly annoying because everyone concerned with design wants to spread the word about it to as many people as possible. Good design can only flourish if more and more people get interested in it. But they won't become interested if we allow it to be wrapped up in a language that no one can understand. When somebody asks, perhaps rather aggressively, why a certain chair is considered by experts to be exceptionally well designed, it is no good replying that it has "a memorable image". That sort of attempt to put an emotional feeling about a design into words won't do any good.

Useful designers

If people haven't got that certain something which gives them an appreciation of good proportions and good colours, they're not going to acquire it by being told that some perfectly ordinary household article has a memorable image, a sculptural form, or a subtle interplay of luminous colours and sophisticated textures. The only hope is to find something practical about the design that can be explained – something like the construction of the chair, the method of fixing the metal legs to the glass fibre body, and so on. The thing to do is to give the impression that the designer is a *useful* person. If people can be made interested in design this way, they are half-way to the stage when they will suddenly find themselves appreciating the proportions of a design without knowing why.

I've written about this subject in DESIGN before, and you may remember that I was subsequently supported by an American designer who sent in a letter complaining about the clouded and verbose jargon of some of his colleagues (DESIGN 122/75). What you won't have seen is a publicity handout circulated by this same man. It reads as follows:

Kenneth J. Robinson, 35, the CoID's promotion officer. He broadcasts frequently, and appears on programmes about design on BBC and commercial television.

"Cost × desirability = value. In this equation, cost is the cost of the total product or of each part of the product; desirability is a generic term which covers function adaptiveness, beauty, durability, and any of the attributes of the product. Therefore the value of a product is actually the summation of values, each determined by the same equation, substituting the desirability under question."

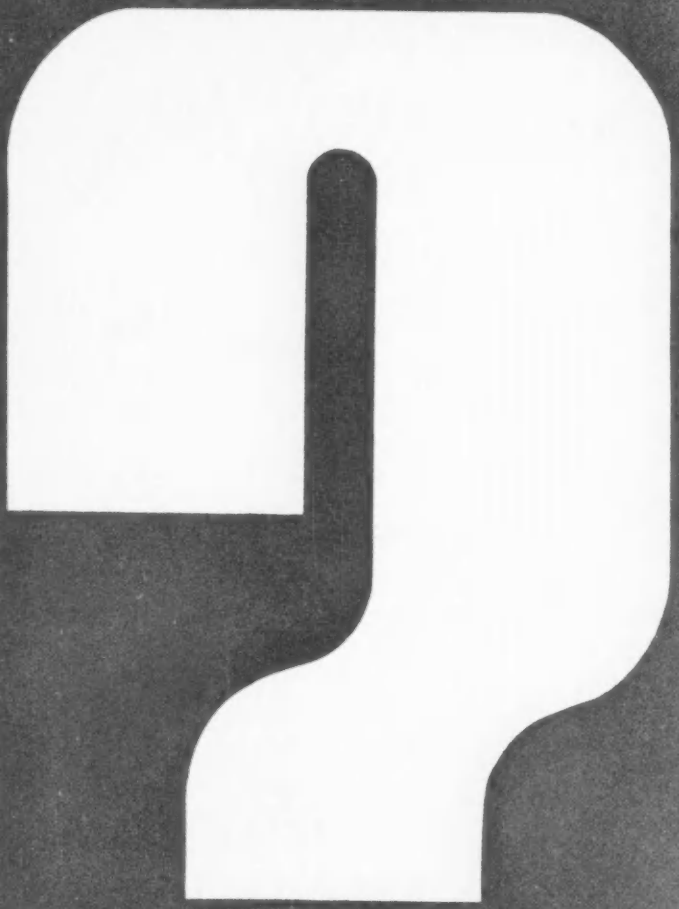
Complexity disease

All the poor man was really saying is that the value of a product depends on what it's worth and what it's good for. Like most people who find themselves saying something particularly trite, he worked hard to make the simple sound complex enough to be scientifically respectable. This is almost a disease among designers and design propagandists. And the reason, as America's *Industrial Design* has pointed out, is that they are often expected to express verbally what can only be understood visually.

"The language of the profession", said that magazine, "is worth examining seriously". Since then I have found myself watching its own language with greater care and growing admiration. I was very impressed by its annual review of well designed products (everything from jet aircraft to ball point pens, with farm tractors somewhere in between the two). All the captions were straightforward descriptions of the products. The assessors avoided the difficult job of saying why they had made each choice, but they did say in an editorial that their judgement had depended solely on such things as the designer's ingenuity, his choice of materials, his success in making a product easy to use and his ability to produce something which had "sheer visual finesse and appropriateness". They did *not* say anything about the efficiency of the products. In fact, they explained elsewhere – with disarming honesty – that they simply didn't know if all the things they had chosen worked properly. And they added that they had to take a lot on trust, and that a good designer *ought* to be trusted to find out about the engineering work his design would be grafted on to.

Language of design

This frankness is unusual among design propagandists. When asked who we think we are anyway, and how we know good looking designs will work well, we tend to stall and to produce fine sounding, antiquated phrases about form following function. It's easier to avoid meaningless phrases in writing than it is in talking. I should never dream of writing about "the truly urban quality" of certain kinds of architecture, but I found myself talking like that recently to a question time audience. *I* knew what I meant, but how could they know? *Industrial Design* is right: the language of the profession *is* worth examining seriously. I look forward to the SIA appointing a sub-committee to draw up a Code of Professional Language. The public would be asked to report lapses discovered in lectures or articles, and the Society would claim fines for the use of such phrases as 'totally new concept'. It would make a fortune. It would also make the designer's job a lot easier.



WHAT IS GOOD DESIGN

L. BRUCE ARCHER

This is the first of two articles in which the author will attempt to define good design. 'Good design', he feels, can no longer be considered as a pure and abstract ideal; it must be judged by more concrete standards – standards which are by no means permanent. In this article he suggests a scale of standards by which a design may be judged. In a later feature, which will take the form of a Design Analysis, *he will apply the standards set out in this article to specific products.*

Answers to the question 'What is good design?' are like answers to the questions 'What is good music?' or 'What is good food?' They are partly, but not entirely, matters of personal taste and they depend a great deal upon what is understood to be the scope of the question and on the standpoint upon which the reply is based. Consequently, if this article is to be of any value in attempting to answer the question 'What is good design?', it must begin by making quite clear what the question is supposed to mean.

Firstly, 'design' in this context means 'industrial design', and therefore concerns manufactured products which have a useful purpose as well as visual significance. It should be noted that graphic design – that is to say, the design of printed matter such as advertisements, book jackets, posters, illustrations, and so on – is embraced by the term 'industrial design', along with domestic appliances, furniture and the like, because graphic design also has a useful purpose (to inform, to persuade, to attract) and is manufactured by industrial processes (blockmaking and printing). The question 'What is good industrial design?' is thus involved with standards of functional performance and manufacture as much as with aesthetic values. Secondly, the word 'good' is an adjective of comparison, used to distinguish between good and bad, and is not a name for a special kind of design. The phrase 'good design', therefore, refers to a scale of standards prevailing in a given field rather than to an abstract ideal divorced from the time and the circumstances. Some people would disagree with this definition, but their arguments will be examined later in this article. For the moment, however, the original question 'What is good design?' will be considered as if it read 'How do I tell good industrial design from bad?'.

The slogans

A few years ago, one would have been tempted to fall back on certain principles, which could be expressed in the form of slogans, 'fitness for purpose' – 'form follows function' – 'truth to material' – 'economy of means' – 'design for production'. These principles meant that the construction and the outward and visible form of an object should be determined by and should give visual expression to the function which it performed; that the materials from which the object was made should display their own characteristic shapes, textures and colours and should not imitate other materials; that the design should achieve its ends by the simplest possible means; and that the product should be designed from the outset to suit the manufacturing processes by which it was to be produced.

Designs were often judged by the zeal with which the designers had striven to be faithful to these tenets. Few people nowadays look upon industrial design primarily as an opportunity for designers to seek ultimate perfection in the demonstration of these ideals, or regard designers as artists, mainly concerned with making their marks as individuals in the aesthetic field. Nevertheless, even now, a product which grossly offended one or more of the old principles would almost certainly be regarded as poor design. The main difference is that modern designers are striving after more concrete ends, but tend to retain the old criteria in judging solutions arrived at by newer, analytical means.

Since it has already been seen that good industrial design

must be judged by standards of functional performance and manufacture, as well as by aesthetic standards, it is necessary to consider the problem in the light of the three living backgrounds against which any industrial design must be seen:

1 The product at the point of use (for example, a refrigerator being used by a housewife in the kitchen).

2 The product at the point of sale (for example, the same refrigerator in company with its competitors in the showroom of a general store).

3 The product at the point of manufacture (for example, the refrigerator giving employment to men and machines in the factory where it is made).

The final form of an industrial design, however it might be *judged*, is *created* by the interaction of all the influences which are brought to bear upon it by the demands of these three separate conditions in which the product has to compete for survival.

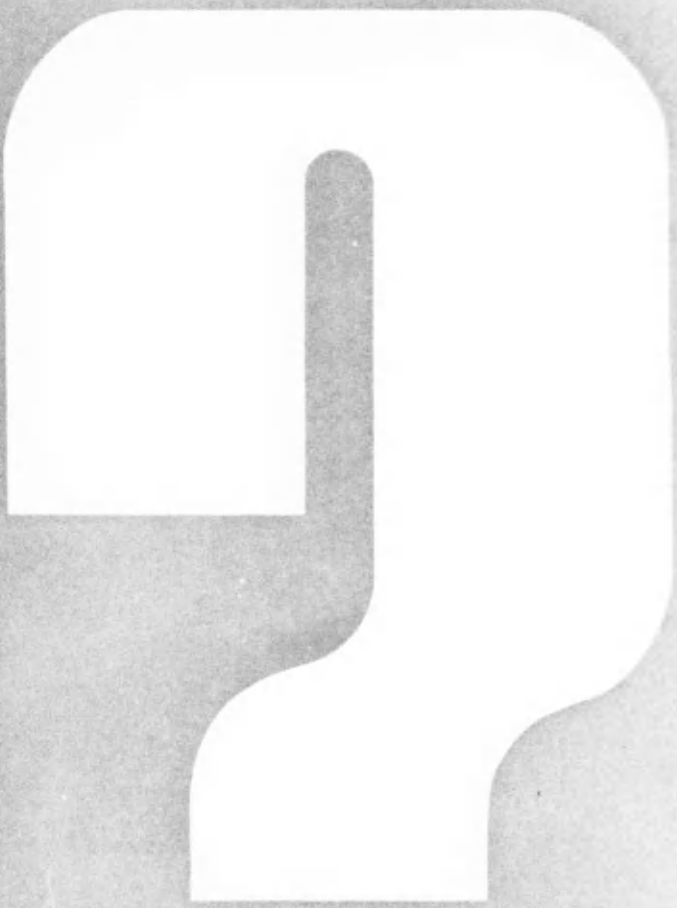
Wide view of function

What are the design factors which operate at the point of use, which is the most decisive of these three conditions? First, of course, is functional efficiency. The product must do its job reasonably well. However, changes are taking place in the way in which designers look at this question of function. Instead of taking the purpose of a product for granted, more and more designers are examining the human needs behind the use of the product, and are re-assessing from first principles the various means by which these needs might be met. Thus, a refrigerator is seen as a food preserving machine; a cup is seen as a hand held drinking vessel; a chair is seen as a prop for relaxation or for a particular activity such as eating or writing; and graphic design is seen as a means for communicating ideas and stimulating action. When the proposals for a new design are looked at in this objective and analytical way, radically new solutions sometimes present themselves. It is also necessary to interpret the term 'efficiency' rather broadly, because the achievement of a high percentage of mechanical efficiency may not count for very much if the product is handled so differently by different users that results vary widely. Functional efficiency is what the housewife actually gets out of a product under all the difficulties and slap-happiness of everyday use.

The second factor at the point of use is the durability of the product in the face of the wear and tear of daily use. It should be designed to last as long as the user is likely to require it. Thus a newspaper is constructed to last for 24 hours, and a building to last for a 100 years. Neither a toothpaste tube which is built to endure too long, nor a coal scuttle which collapses in a season can be considered good design. Thirdly, to be acceptable at the point of use, the product must be so proportioned and arranged that it suits the stature of the user, that the handles and controls fall easily into the grasp, that the markings are readily seen, and so on. To be wholly effective, the product should give rise to a certain amount of pride in possession, so that it is fully employed and properly looked after.

The two most controversial factors at the point of use, however, are questions relating to appearance. If a product is to have any chance of a reasonable share of the market it

Point of use:
the complex functions of design for people



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The final form of an industrial design, however it might be *judged*, is *created* by the interaction of all the influences which are brought to bear upon it by the demands of these three separate conditions in which the product has to compete for survival.

Wide view of function

What are the design factors which operate at the point of use, which is the most decisive of these three conditions? First, of course, is functional efficiency. The product must do its job reasonably well. However, changes are taking place in the way in which designers look at this question of function. Instead of taking the purpose of a product for granted, more and more designers are examining the human needs behind the use of the product, and are re-assessing from first principles the various means by which these needs might be met. Thus, a refrigerator is seen as a food preserving machine; a cup is seen as a hand held drinking vessel; a chair is seen as a prop for relaxation or for a particular activity such as eating or writing; and graphic design is seen as a means for communicating ideas and stimulating action. When the proposals for a new design are looked at in this objective and analytical way, radically new solutions sometimes present themselves. It is also necessary to interpret the term "efficiency" rather broadly, because the achievement of a high percentage of mechanical efficiency may not count for very much if the product is handled so differently by different users that results vary widely. Functional efficiency is what the housewife actually gets out of a product under all the difficulties and slap-happiness of everyday use.

The second factor at the point of use is the durability of the product in the face of the wear and tear of daily use. It should be designed to last as long as the user is likely to require it. Thus a newspaper is constructed to last for 24 hours, and a building to last for a 100 years. Neither a toothpaste tube which is built to endure too long, nor a coal scuttle which collapses in a season can be considered good design. Thirdly, to be acceptable at the point of use, the product must be so proportioned and arranged that it suits the stature of the user, that the handles and controls fall easily into the grasp, that the markings are readily seen, and so on. To be wholly effective, the product should give rise to a certain amount of pride in possession, so that it is fully employed and properly looked after.

The two most controversial factors at the point of use, however, are questions relating to appearance. If a product is to have any chance of a reasonable share of the market it

Point of use:
the complex functions of design for people

Pleasure

Appearance

Efficiency

Control

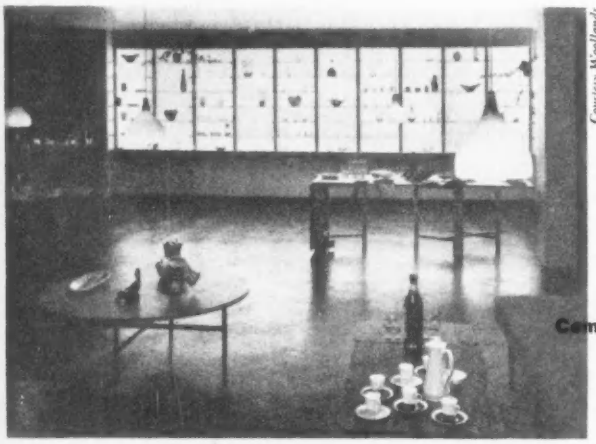
Reliability

Safety

Comfort

Maintenance

Point of sale:
competition in the varied environment of the market place



Courtesy Woollands

Competition within order

Competiti

must have a wide enough appeal. It must therefore blend tolerably well with the existing background and the other appliances in the homes of the people to whom it is directed. But at the same time, in order to serve the interests of progress in the community *as a whole*, it should contribute something towards raising the standards of discrimination of the ordinary user. These two aims, besides being in opposition to one another, have tended as a pair to displace the single notion of a Platonic ideal, standing above and apart from everyday life. The most heated and the least decisive arguments about the merits of a particular design usually revolve about these ethical issues, and we shall return to them later.

Point of sale

The second of the three backgrounds against which a design must be judged is the background of the market place – 'the point of sale'. Here a different set of factors dominates the question of what constitutes good design.

Firstly, in this context, a product must have an appeal for the prospective buyer, either because the consumer already knows that he wants such a product or because the desire to possess it comes upon him when he sees it. This appeal must have sufficient force to make the prospective buyer willing to pay the price demanded. A product, however brilliantly conceived and executed in other particulars, cannot be considered good industrial design unless a sufficient number of people are willing to buy it at the price. There are many, including some business people, who emphasise the importance of designing to a price, but there is plenty of evidence that price alone is not as important to the success or failure of a design as the whole balance of appeal, price and desire-to-possess. A product can be insufficiently desirable for the public to buy at *any* price.

Fashion

Also involved with the question of appeal is the fashion element. The appeal of a product in the artificial atmosphere of a brightly lit showroom, surrounded by a host of similar and dissimilar products all competing for attention, is not necessarily the same as its appeal in the context of the home. To attract the customer there is a constant need for a product to look new, different, and exciting. Inevitably, in the search for new solutions in a well worked field, there is a general movement in the most profitable direction by all the competitors, in a process of trial and error and imitation. When a successful design feature, such as a new shape or form of decoration, is taken up in this way it sometimes becomes exaggerated by over anxious manufacturers. These exaggerations are often considered vulgar by those with sufficient knowledge to discriminate between the original and the imitative designs, with the result that fashion in product design is often associated with vulgarity.

However, study of the nature of fashion changes indicates that it is related to something basic in human nature, and is not often imposed by unscrupulous designers or manufacturers. Indeed, the unending search for variation is part of nature's fundamental law – random mutation and survival of the fittest. Further study of the mechanism

of fashion cycles might make it easier for designers to accommodate and make good use of the fashion element without sacrificing more permanent standards. The development of the women's garment industry has shown that fashion *can* be prominent in design *without* perpetuating a competition in vulgarity. Nevertheless, at the moment anyway, an industrial design which trades too obviously on novelty, or too readily imitates a successful predecessor will almost certainly be condemned as bad design.

The oscillations of the fashion cycle are not to be confused with the gradual rise and fall of aesthetic standards in human society as a whole, although the search for novelty often helps to popularise a radically new conception. The taking up and total acceptance of fundamentally new standards of judgment, such as those created by the designs emanating from the Bauhaus in the 'twenties and 'thirties, and later by the Eames chairs in the 'forties, are examples of the groundswell of the aesthetic movement behind the fashion cycle.

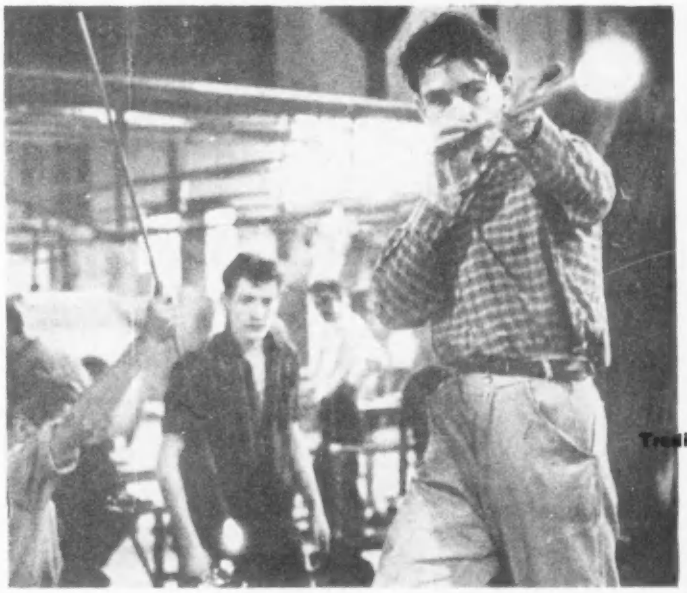
Flow line assembly

Courtesy The Rootes Group

Point of manufacture

Against the last of the three backgrounds to industrial design – the factory – yet another set of factors must be taken into account in assessing good design. The most important, of course, is the skill with which the design is matched to the capabilities and the limitations of the materials and the machinery in the factory in which it is to be made. This does not necessarily mean that every component must be completely simple, and made by the cheapest possible method. Often it is worth while to employ a difficult or expensive manufacturing operation in order to produce a very desirable functional or visual feature, or in order to keep a factory department going. However, a design cannot be considered good if the product is not fairly closely matched to the production process.

Apart from these strictly technical matters, it must be remembered that for the manufacturer the product is an investment, and his reason for making the product at all is to create new wealth (in the economist's sense of the term) with which to pay the workers, distribute the dividends, and make the commercial world go round. The design has therefore to meet certain basic economic requirements. It must sufficiently enhance the value of the raw materials employed, and it must provide an adequate return within a reasonable period on the capital tied up in it. Thus, from an economic point of view, industry and the community gain most from designs which are so desirable that consumers are willing to pay good prices for them. Prices which leave a good margin for profit are the only way of providing the extra wealth which pays for research, design, advertising, and other creative activities Consequently, in the world of manufacture, good design might be said to be design which greatly increases the market value of the product over the cost of the materials and labour put into it.



Traditional craft

Quality control

Point of manufacture:
suiting production processes and creating new wealth

The basic conditions

If all these are the facts, what can we conclude about the nature of good design? First of all, we can state some of the conditions which determine whether or not a product can be entertained for consideration at all. Indeed, we

can apply these conditions in the form of a series of questions which will eliminate designs which fail to measure up to the basic requirements.

1 Does it work? That is to say, does the product perform the function (in the broad sense) with a degree of efficiency that is appropriate to the type of product and the circumstances of its use?

2 Is it safe?

If the answer to each of these questions is 'Yes' then the design reaches the bare minimum requirement, and may be considered further.

3 Will it last? That is to say, will it remain in good working order for as long as is expected of that sort of product?

4 Is it fitted to the user? Can it be comfortably and effectively used, cleaned and maintained by a user of ordinary physique and skill?

If so, then the design at least reaches the minimum standards of utility, and can be considered further.

5 Does it appeal? Are sufficient prospective consumers willing to pay the price demanded?

6 Is it profitable? Do the manufacturer and the distributors gain a sufficient return on their capital to be able to continue to market it?

If so, the design is at least a practicable commercial proposition.

Here, however, we have come back to the difficulty with which we started. There are some people who declare that good design is still good and bad design is still bad, regardless of whether the public likes it or not, and regardless of whether it is a good commercial proposition or not. This is such an important issue that it must be dealt with now, before the remaining questions which define good design can be formulated.

No absolute values

The fact is that there are no absolute values in design existing independently from human judgment. Design has no meaning, except in peoples' reaction to it. There are, however, a number of standpoints from which a human evaluation may be made. If, for example, one takes an industrial design, such as a chair, and looks upon it as if it were a piece of sculpture, one may pass a strictly aesthetic judgment upon it. If, however, one takes the same chair and looks upon it as an industrial design, then it must be considered within its industrial context, and within this context a product only remains good industrial design so long as it can be produced and sold at prices which satisfy both the manufacturer and the purchaser. Hence there are some classical pottery designs, such as late eighteenth century Wedgwood, which can still be considered good industrial designs because they can be made and sold on present day markets. On the other hand, there are other historical designs, which, although much respected, cannot be considered good industrial designs because they are thoroughly inefficient in use or uneconomic to make by modern standards. Nevertheless, some of these old designs may be cherished and kept in use in otherwise modern settings because they seem to provide links with old and respected traditions and act as a foil to the modern ideas which have sprung from them.

The answer to our difficulty with the challenge 'once good, always good' is therefore, that although aesthetic and historical standards are perfectly legitimate standpoints from which to pronounce on a design, the standpoint of good *industrial* design demands that current public acceptability and commercial profitability must be taken into account as well as suitability to modern methods of production. Even these are not the final criteria, however.

We are now in a position to return to the main thread of our argument and pose the next question. Having established that the product in question meets all the functional and economic requirements, we can ask:

7 Does the design tend to raise rather than to depress the current aesthetic standards of the class of product? We might be able to reply 'Yes' to this question because a certain design raises the standard in its own class; yet, because the standard of that class is low, the design may not be nearly as good as the standards generally prevailing in other classes of product. Thus good industrial design can be good in its own field without being good by the highest standards of its day.

If, then, we can answer 'Yes' to this as well as to all our previous questions, we can pronounce the design good, in its class.

High style

However, it is possible to go further and to define designs which are good by *every* standard. A design which is well up to the highest standards prevailing in any field of the day is what the Americans call 'high style'. This does not mean 'highly styled'. In Britain, 'high style' might be described as design which is in the best of modern taste. Good taste, however, defies definition. To some extent, the criteria of good taste are negative. Thus good design is free from ostentation. Good design avoids deceit. Good design avoids imitation. In other words, 'high style' is free from offence against the old design principles – 'fitness for purpose' – 'form follows function' – 'truth to material' – 'economy of means' – 'design for production'. It is possible to be excessively restrained and austere, too, of course. Design which offends by being too antiseptic has been christened 'ghastly good taste', and is not good design because it betrays a kind of conceit. Good taste, like good manners and every other expression of aesthetic discrimination, is never laid down; it is continuously created by the common and unspoken consent of the community. The lead is often taken by people, who, by virtue of their public position or in recognition of their superior knowledge or example, become tacitly acknowledged arbiters of taste. In modern times, however, other strata of society can and do reject the lead of the erstwhile arbiters of taste if they seem to go too fast, or too slow, or in a direction which is not felt to be the spontaneous and inevitable product of the time. So we come to our next question:

8 Is it in the best of modern taste?

If the answer is 'Yes' then we will have selected a design which is at the height of its time.

(The difference between the answers to 7 and 8 may be illustrated by the CoID's policy with regard to The Design Centre. Taking the other six questions into account, products which conform to 7 would be accepted for display in the Centre during the normal course of the year; whereas products which are also judged to conform to 8 might be singled out for special commendation by receiving a *Design Centre Award.*)

All photographs are by John Garner except where otherwise credited

The pace setters

But there is one more level of assessment, the highest of all. Some designs, perhaps in the course of employing a new material or a new technique, or in fulfilling a new need, create a form which is original. There is thus no precedent upon which to base a judgment, and the design provides a new field in which aesthetic appreciation may be exercised. The design provides the yardstick against which subsequent designs may be measured, and may even set a trend which spreads to other fields of design. There are also other designs which achieve the most highly refined embodiment of existing standards. These two kinds of outstanding design become milestones in the history of industrial design. The former kind, the breakaway designs, are easily seen but they are also sometimes quickly outmoded. The latter kind, the ultimate refinements, are harder to spot but are the more likely to remain acceptable for a long time. The very difficult task of picking out from the new designs which appear everyday those which are likely to prove pace makers is, of course, a major preoccupation with designers, manufacturers and salesmen. Once in a while a design appears which creates an immediate impression of rightness – the long awaited and inevitable answer to the problem. If we are looking for a design which falls into the highest category of all we must ask the final question:

9 Does it set a strikingly new standard in construction, performance or form?

If the answer to this, and to every one of our previous eight questions is 'Yes' then we have identified truly great design.

Conclusions

What, then, is the answer to the question which we originally set out to examine – 'What is good design?'. We can say right away that good design works; good design is safe; good design is fitted to the user; good design appeals to its public; good design is profitable. Good design must also tend to raise rather than to depress the aesthetic standards in its class. It must in fact be all of these in combination, for if one aspect has been neglected it will be something less than good design. If it is to be judged 'high style', or at the height of its day, good design must be in the best of modern taste. If it is to be judged truly great design it must set a strikingly new standard.

The only way to recognise good design when it appears, therefore, is to become immersed in all the interests which represent the spirit of our time, to be aware of what has gone before, to notice the response of both discriminating and less discriminating users to old and new designs, and then to make a personal and intuitive judgment. No one, be he consumer, designer or creative artist is really independent of the standards of the mass of society. That is why in the end, it is the subjective and instinctive verdict of each individual, with all his pride and prejudice, which becomes the massive judgment of the market place.

In the end
it is the subjective and instinctive
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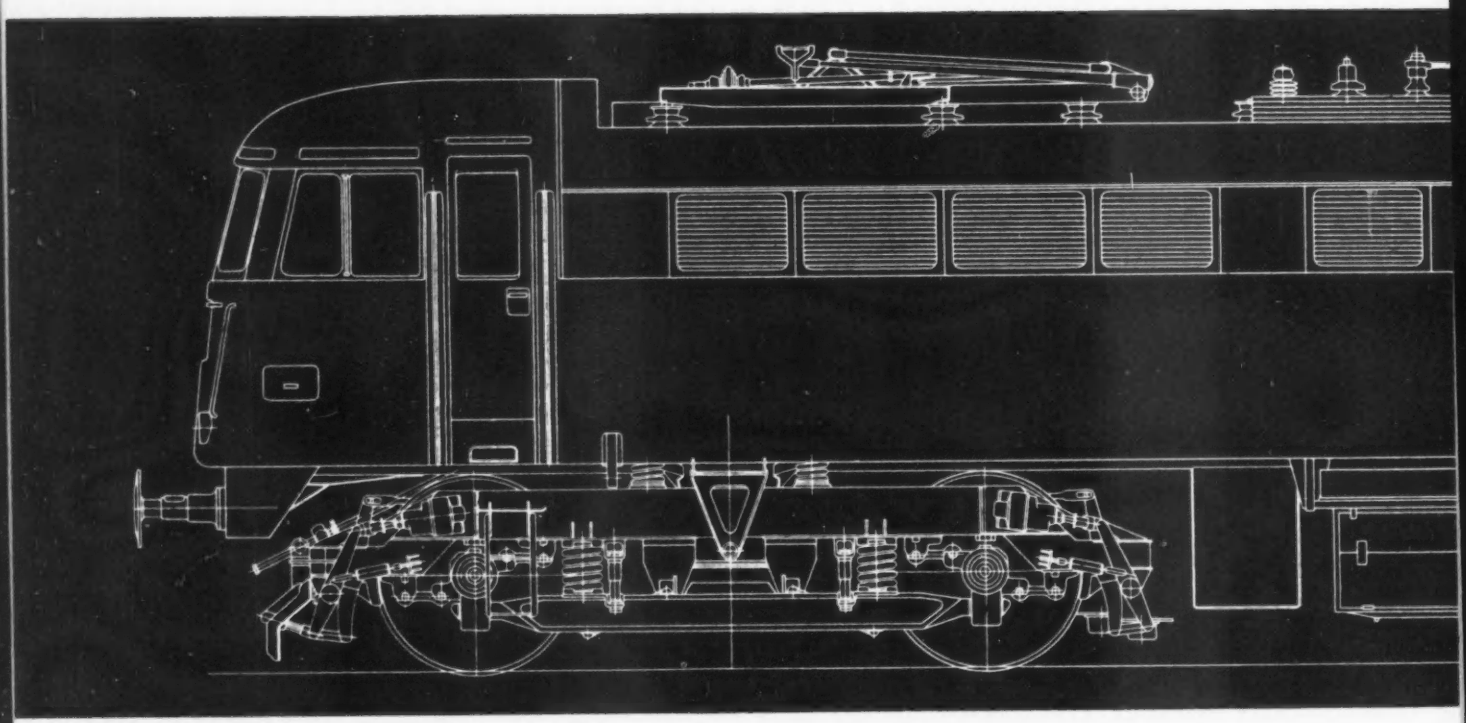
of the market place

modernising British Transport no. 3



LOCOMOTIVES

The following two articles describe the current developments in the design of British Railways' diesel and electric locomotives. It is now over three years since the British Transport Commission decided to introduce a new policy on design and formed its advisory Design Panel. As Robert Spark shows, the design of locomotives was carried out in the early stages without the collaboration of consultant designers and largely without the wealth of experience that was available to the builders of traditional steam locomotives. More recently the introduction of the consultant designer to collaborate with the chief mechanical engineer and the regional engineers of B T C has begun to take effect but its full impact has still to be felt.

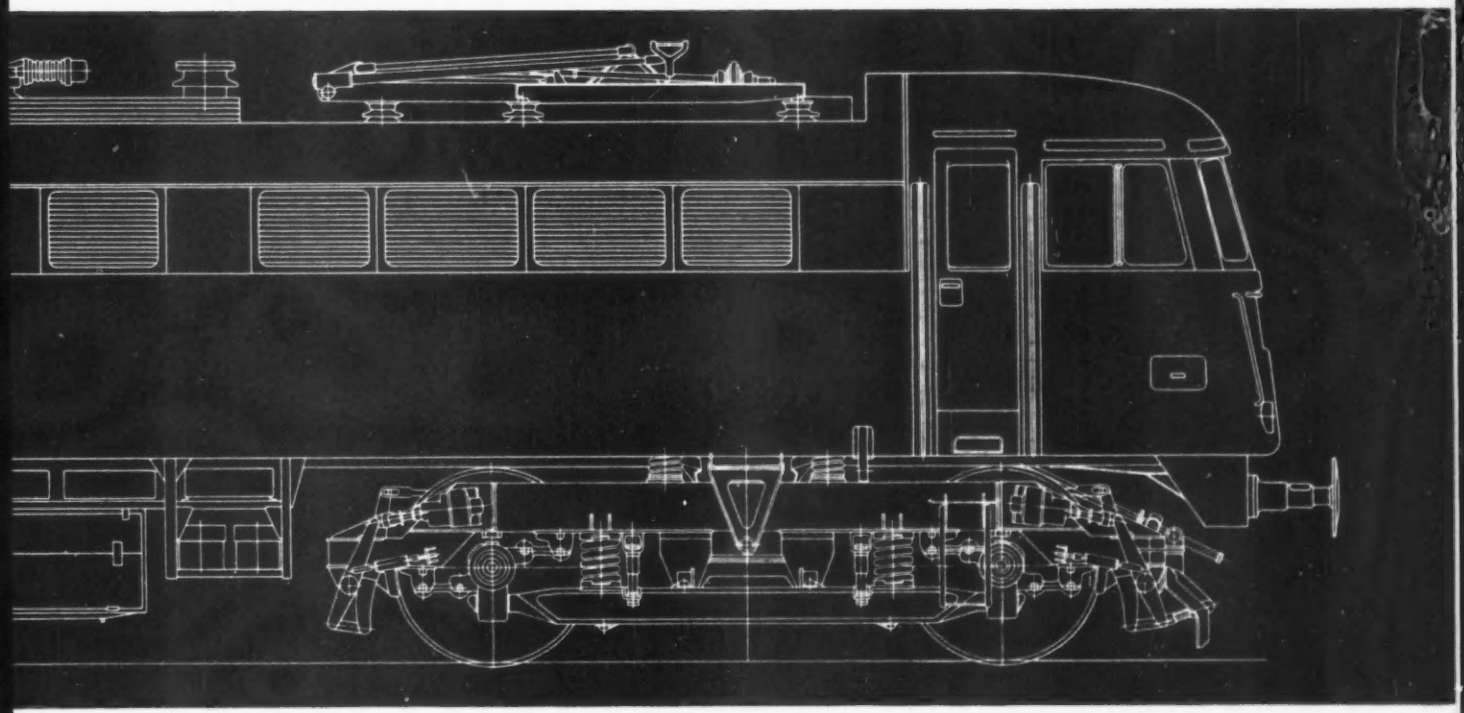
J. Beresford-Evans in the second article describes some of the difficulties confronting industrial designers in a field where they previously had been little used. He discusses some of the factors which limit the designers' opportunities.

ROBERT SPARK
The author of the first article has been editor and publisher of his own magazine European Railways *for about 10 years. He is European editor of* Modern Railroads *and* Trains, *both published in the United States, and with a colleague has recently prepared the section on railways for the* Encyclopaedia Britannica.

Disappointment has been expressed in some quarters with the main line diesel locomotives so far introduced by British Railways. Adverse criticism has been levelled at their appearance, mechanical design and efficiency and at the fact that there are so many different types. Such a criticism was almost inevitable as the diesel was a new form of traction for British Railways.

When the modernisation plan was announced in 1955, BR had little practical knowledge of main line diesel locomotives. It had a choice of buying tried and tested designs from abroad – either Europe or the USA – or of having designs built in this country and facing the subsequent development problems. For a number of reasons (some political) the latter was chosen.

BR decided to have some 174 diesel locomotives, split into batches of various types, built by outside contractors and BR workshops. Following experience with



these batch prototypes, the best ideas and equipment would be selected to form, in the four main power classifications, the standard designs of the future. Events overtook this scheme; the need for the economies of diesel traction became urgent. Therefore some of the batch prototype orders were extended before the designs had been evaluated.

The result is that BR's first fleet of diesel locomotives consists of a heterogeneous collection: some successful and some that may have a foreshortened existence and be written off before their working life has expired. This policy which has had to be adopted also explains why there is so little unity among the designs produced so far. By next year the BR hopes to have sufficient evidence to be able to finalise the small number of designs which will form the real backbone of the future diesel traction fleet. It is these locomotives which are really important and which will reveal the strengths and weaknesses of the new design policy.

Two of these future standard locomotives will not resemble closely any of the

units produced so far. For example the type 4 diesel electric designs in existence now are on the heavy side. The available equipment was of such a weight that, due to civil engineering requirements an additional pair of wheels has had to be added at each end of the six-wheeled bogies. This in turn has required a longer frame and as a consequence the locomotive has become heavier and more clumsy. In the future type 4 designs only two six-wheeled bogies will be necessary. The quality of finish should also improve in the future – particularly the standard of metal forming and finishing, and welding.

Compromise solution

Looked at in this light, the locomotives so far produced are neither better nor worse than could be expected. BR and the manufacturers were working with a new medium; there were limitations on the time that could be spent on design; it was only recently that industrial designers became part of the design team; there was insufficient time to create a satisfactory working relationship between designer and engineer. But if each consultant designer has had only a slight influence on each project, this is better than nothing at all, providing that it is not regarded as the accepted standard for the future when it is to be hoped that aesthetics and function will *together* be the starting point.

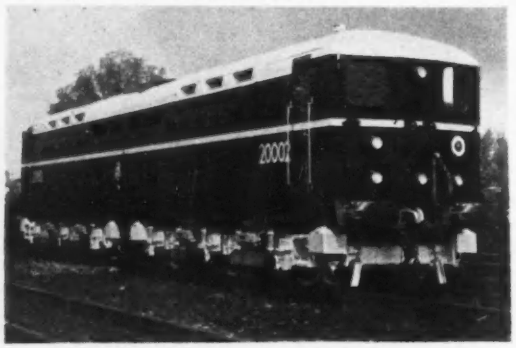
Prior to the fairly recent inception of the Design Panel, it was natural that BR engineers and manufacturers gave first priority to technical design and the requirements of operational efficiency. Such locomotives as Nos *10000*, LEFT, and *10001*, Britain's first post war main line diesel locomotives ordered by the LMS before nationalisation, have had a chequered history in consequence. The designs may at first glance look crude compared with modernisation plan main line diesels which have been influenced to some extent by the Design Panel, but a close comparison with *D1*, OPPOSITE, which has had the benefit of professional advice will show that they bear a fundamental similarity (both were built at Derby). No *10000* does show, all too clearly, the need for the work of the Design Panel. No *20002*, BELOW LEFT, is one of three electric locomotives running on the Southern Region. The design was originally ordered by the Southern Railway before nationalisation. Although box-like in shape, it has a solid engineering quality in its general appearance. Many minor details could have been cleaned up comparatively easily.

There must certainly be a closer and more understanding relationship between engineer and designer. A locomotive is as much a part of a railway system as a timetable, the furniture in a waiting room and the layout of a marshalling yard. The public – whom the railways are there to serve – judges the system as a whole. A locomotive requires a high standard of appearance just as much as the train services need to reach a high standard of punctuality. That BR engineers should understand this is of vital importance.

The following six examples indicate the extent of the effect which industrial designers have had on current designs.

No. *10000*, one of Britain's first post war main line diesel locomotives

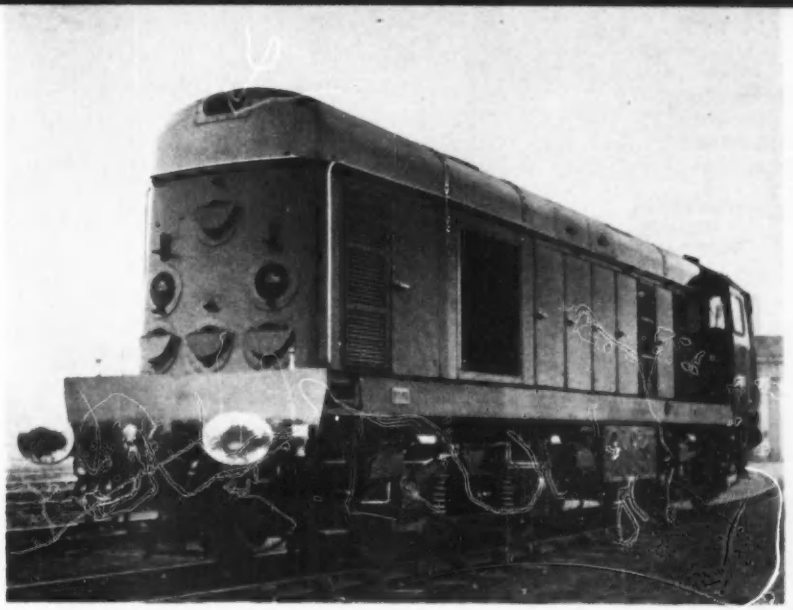
No. *20002*, operating on the Southern Region



D 8000

The first main line modernisation plan diesel locomotive, the type 1, 1,000-hp series. As with most of the other diesels, the bulk of the engineering layout was completed before the consultant designer started work. In addition, time was limited, otherwise further improvements could have been incorporated. The *D 8000* is single-ended, intended for freight haulage. Although its purpose in life is unexciting, it has the great advantage of looking exactly what it is: a robust, economic diesel locomotive powered by an internal combustion engine. The nose and rear of the cab have to carry a conglomeration of lamps and indicator discs – an operational requirement. Cables and pipes for multiple-unit running provide the usual fringe to the buffer beam, but they need to be accessible and at least they are not so offensive as on some of the larger units.

REGION *London Midland.* BUILDER *The English Electric Co Ltd.* CONSULTANT DESIGNER *Professor R. D. Russell.*

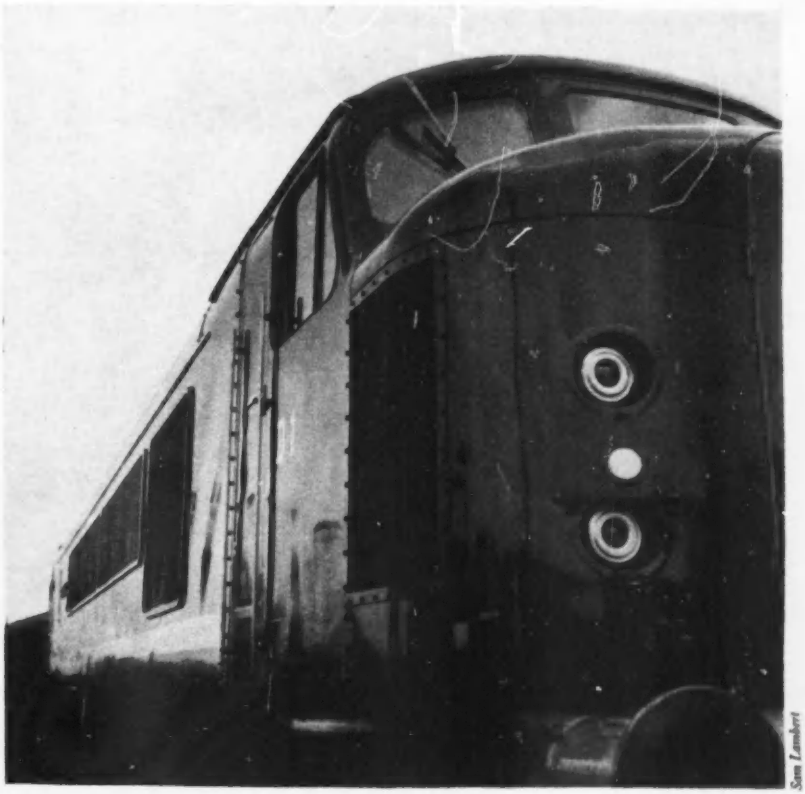


D 1

Here again the consultant had very little influence over this locomotive. Some 147 of these type 4, 2,300-hp diesel electric units are being built at BR's Derby workshops. Many aspects of the design were already decided upon when the consultant, Jack Howe, was appointed. Metal panelling of the body is poor as BR workshops are probably not used to working to the finer tolerances and finishes required for diesel and electric traction. In this respect both BR workshops and outside contractors are not up to the standard of the motor vehicle industry. Shaping, panelling and welding should improve in time.

REGION *London Midland.* BUILDER *BR, Derby.* CONSULTANT DESIGNER *Jack Howe.*

Sam Lambert



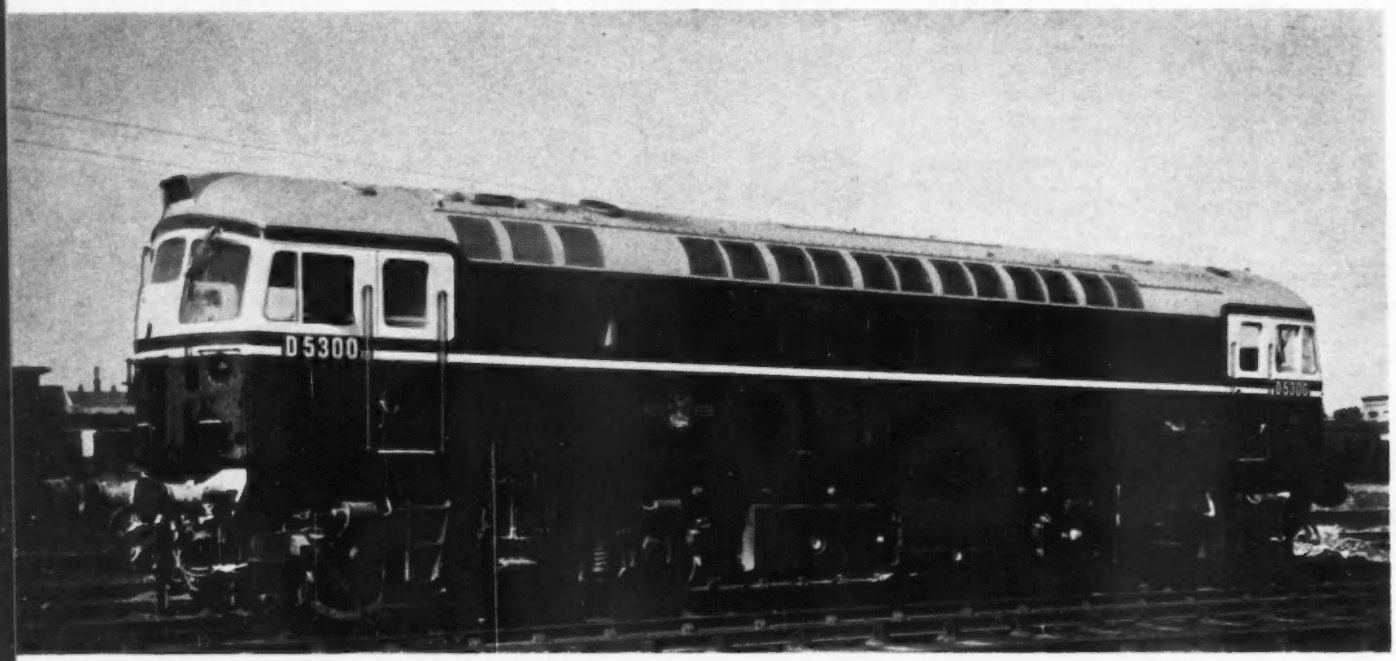
Sam Lambert

BR3

D 5300

This design – type 2, *D 5300* series of 1,160 hp – presented quite a challenge. It is a short, stubby unit, with no superfluous space. E. G. M. Wilkes advised on details and body design. His terms of reference were fairly exacting as the chassis had already been designed and there were rigid restrictions on space. The nose arrangement solves the problem of the doors for connecting units in a satisfactory manner. (Future designs will not have this restricting feature.) The standard of workmanship here is higher than on some other units.

REGION *Eastern.* BUILDER *Birmingham Railway Carriage & Wagon Co Ltd.* CONSULTANT DESIGNER *E. G. M. Wilkes.*

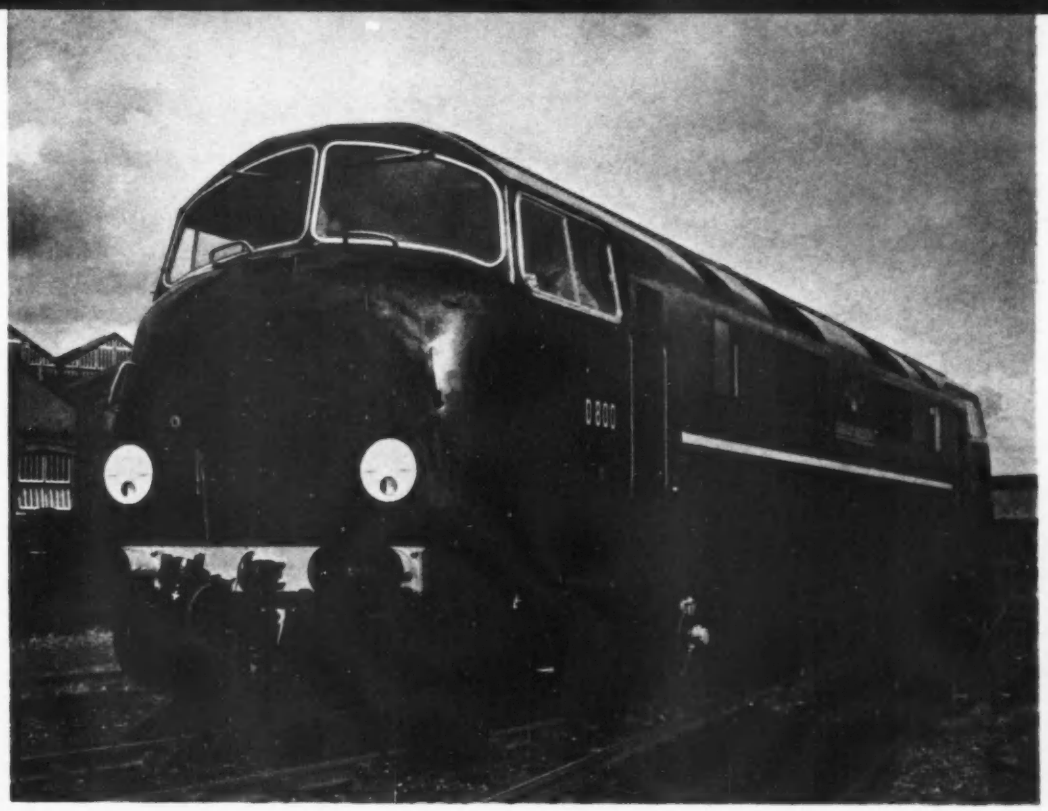


D 5700

Another type 2, the *D 5700* series is a curious asymmetrical design running on one six-wheeled bogie and one four-wheeled bogie. The flat cab fronts were forced on the consultant as the manufacturer had difficulty in getting all the mechanical and electrical equipment within the overall dimensions. The cabs are therefore reduced in size and the designer's original frontal treatment has completely disappeared. The jungle of pipes at the buffer beam level, for example, seems worse than usual and the air horns appear to be dangerously exposed to damage.

REGION *London Midland.* BUILDER *Metropolitan-Vickers Electrical Co Ltd.* CONSULTANT DESIGNER *Jack Howe.*

Sam Lambert



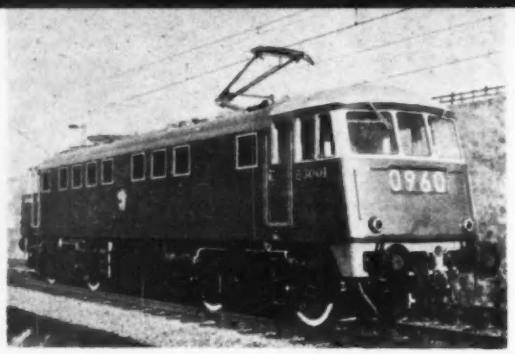
Sam Lambert

D 800

The engineering design of the type 4, *D 800* series is basically similar to the German Federal Railways *V200* locomotive (see page 42), the same engines, transmission and constructional techniques being employed. It differs from the other main line diesels discussed, having hydraulic instead of electric transmission. The high powered diesel hydraulic locomotive is a comparatively recent development and BR wanted to assess its capabilities in comparison with other forms of transmission. To adapt the *V200* shape to BR's more limited loading gauge was hardly a good idea, although attractive from the constructional point of view. The original body shape for the *D 800*, as conceived by the consultants, Misha Black and J. Beresford-Evans, departed from the German concept. This was however rejected in favour of a scaled down version of the *V200*. No connecting doors in the nose were demanded by the Western Region, but a train number frame was subsequently added; this is being incorporated with the two small inspection doors on later examples.

REGION *Western*. BUILDER *BR, Swindon*. CONSULTANT DESIGNERS *Misha Black and J. Beresford-Evans of DRU*

BR3



E 3001

This electric locomotive has been included as it is the first example to be used for BR's new 25kV AC electrification scheme which will embrace such important routes as London-Birmingham and London-Manchester. Some 100 of these locomotives are on order and they are being built by BR workshops at Crewe and Doncaster and by three outside contractors. There are thus five manufacturers involved. The intention was to have similar locomotives, and it is already obvious that many minor external differences will be seen when all five examples are running largely due to differences in internal electrical equipment. As in the case of the diesel locomotives, the technical design was too far advanced for the designers to have much influence on it when they started work. Although the lack of fuss on the cab front is a noticeable feature, the route indicator box was a later addition – and as is usually the case it looks it. A drawing of the Doncaster version of this locomotive is shown at the beginning of this article.

REGION *London Midland.* BUILDERS *BR Crewe; BR Doncaster; AEI/Birmingham Railway Carriage & Wagon Co Ltd; GEC/North British Locomotive Co Ltd; English Electric Co Ltd.* CONSULTANT DESIGNERS *Misha Black and J. Beresford-Evans of DRU.*

Sam Lambert

Designing a locomotive

When you start to design an industrial or commercial product, in whatever capacity you work, you have a fairly constant set of parameters, though the details may vary considerably from job to job. But in the design of a new locomotive, many of the industrial designer's usual points of departure are absent: instead there is a peculiar, very large, and often tenuous, set of factors that are related to one another at widely spaced points.

A locomotive is a large item of capital equipment that has attracted to itself most of the romantic associations of railways. It stands as a symbol for the whole system of railway engineering which revolutionized land travel. With roots embedded in the last century, the present problem, both technically and as a symbol, is to restate the efficiency, convenience and safety for the ways of the next half century.

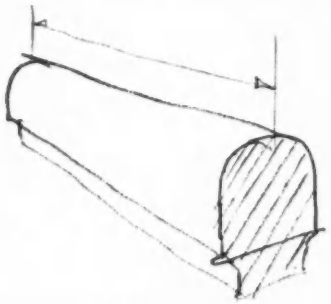
J. BERESFORD-EVANS
the author of this second article, is a regular contributor to DESIGN. *He studied and subsequently taught at the LCC Central School of Arts and Crafts and now practises as a general design consultant, principally dealing with capital goods in the engineering field. As an associate of Design Research Unit, he has been concerned with the design of locomotives for about four years and, in conjunction with Professor Misha Black, is now working on his eighth locomotive design.*

Physical limits

Civil engineering structures, such as bridges and tunnels, are classified according to structure gauge, and this determines the cross section of vehicles that can safely pass through them.

The gauge has been inherited from the beginnings of railways in this country, when bridges were made high enough to clear the *Comet*'s chimney. We are unfortunate, in this respect, in having pioneered railways, for countries that began later were faced from the start with larger machines and equipment. American railways were also able to build largely on open country, where size limitations were not so critical.

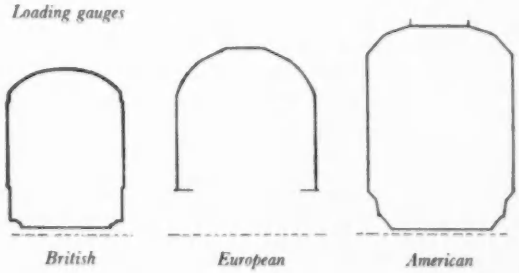
Thus a British locomotive design starts on a tighter set of measurements than those of almost any other country. All our



design is so held within the limits of this gauge that a modern locomotive tends to appear as if it had been extruded through the gauge and cut off at the limits of its length.

For a locomotive to be able to run on all the main systems in Britain, it must be approximately not more than 13 ft high, and

Loading gauges



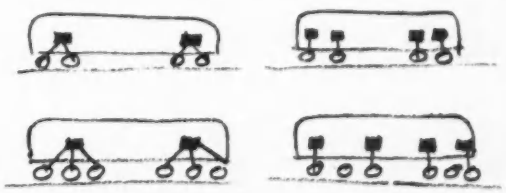
not more than 9 ft wide in the body or 7 ft 6 inches wide in the undercarriage.

The length will usually be limited to about 68 ft, and it is an advantage if it can be shorter. In passing over a curve the locomotive pivots on the two bogie centres, so that the ends project or throw over on the outside, and the middle cuts across the curve on the inside. Thus, great length will require the body to be narrowed or the ends tapered if it is to be kept within gauge.

Weight

Length also means weight, and by strict economy it has been possible to pack some of our most powerful locomotives into little more than 50 ft. All the available length is filled with machinery, so the space allowable for cabs and the shaping of the ends must be kept to the minimum that will provide comfortable driving space.

The weight of a locomotive must be distributed reasonably over its length, and the maximum allowable on main lines is 20 tons per axle. The tractive effort (the pulling power) is more important than the actual horse power of the engines. The power transmitted through the driving wheels is limited by the degree of adhesion of the wheels to the rails before they slip, and a rough measure of this adhesion is 25 per cent of the weight carried by the driving wheels. It is desirable, therefore, that all



Different ways of distributing power to the axles

the driving wheels shall be loaded to the maximum allowable, and we tend to classify into types of four-axle locomotives, driving all four and weighing up to 80 tons, or six-axle locomotives weighing up to 120 tons and, if possible, driving all six.

Motive power

The steam locomotive was like a nude, with its mechanism exposed and its external shape determined by the sum of its working parts. But a modern locomotive is almost entirely clad and the forms of the prime movers and control mechanisms are hidden. But whereas a steam engine exhausts its waste heat in a plume of steam and smoke, diesel or electric locomotives require a vast amount of cooling air, which is expelled invisibly as a hot air exhaust. Thus a characteristic feature of such machines is always copious openings for the intake of air, just as the characteristic sound is the whistle of fast moving air and the hum of ventilating fans.

The total effect of all these technical matters is producing a

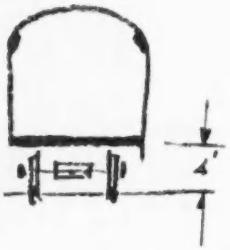
BR3

family likeness in all British locomotives used for freight and passenger work; though shunting engines, which have special operational needs, are developing rather differently. Thus the industrial designer is never asked to dream up an entirely new shape, comparable for instance with the *A4* streamlined locomotives of the LNER, but must work within a fairly rigid framework where most of the advantages and the difficult points are common to all.

Governing factors

A list of these factors can serve as a rough guide to the designer's medium, though they may not all be present at any one time, and they will certainly vary in emphasis or importance from locomotive to locomotive.

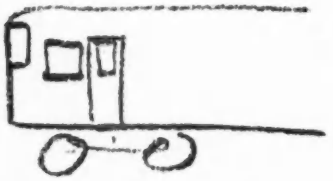
The length Overall this is limited. Though it is possible for the nose of the cab to overhang the buffer beam by a few inches, there must be sufficient clearance between two locomotives to avoid crushing a man standing inside the buffers.



The underframe The loading gauge narrows at points below 4 ft from rail level, so that there is an inevitable longitudinal division of the form at this point. This is usually the most convenient place for the main frame or the lower member of the truss, the area above being machinery space, and that below being closely filled with the bogies, brake mechanism, accumulators and the like. The upper space is accessible from within and the lower from the track side or pit. Thus it is often logical to treat the upper part, the body of the locomotive, as a separate item of design with continuous cladding in livery colours, and the underframe as fully exposed mechanism without sheathing. In certain designs, like the long Swindon-built diesel hydraulics, it has been possible to enclose this lower part, except at the bogies, without limiting accessibility.

Buffer beam Distinguished from the rest of the locomotive by its orange-red colour, it carries the buffers, brake hoses and jumpers, and is pierced for the draw gear. A fairly prominent structural member, it is uncomfortably filled with equipment. A more important matter for the designer, however, is that the buffing and coupling centre is fixed at 3 ft 5½ inches from rail level. After allowing for the buffer-stock flange and fixing clearance, this means that the lower edge of the nose may need to be several inches higher than the lower edge of the body. It is sometimes possible to case the buffer stocks and so to integrate the whole of this buffer-side-nose complex, but it remains a matter of detailing to solve, at least in part, a difficult problem.

Cab windows The side windows of the cab must be fairly low in the body side so that the driver can look out to the rear; but the front windows often extend upwards into the roof area and have a comparatively high lower cill to clear the driver's desk. Thus a common form is a pair of spectacle-like windows at the



front which do not align with the height of those at the side. One of the most persistent and critical problems before the industrial designer is to resolve this break in form at a most prominent place, and to achieve some kind of order in the fenestration (see page 39).

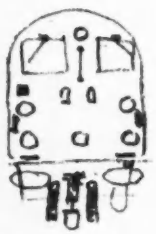
Communicating doors It is often thought desirable to provide doors in the nose so that, when working with two locomotives in tandem, the co-driver can have access to the rear one. Apart from making a large slab area at the centre of the nose, this requirement forces the window arrangement into two separate lateral shapes with a hump over the door, or creates an

unsuitably high window line. Only the most careful contrivance of detailing can make either solution even tolerable with existing window requirements.

The nose When the power unit is a permanent part of a train that is made up for long distance runs, it has one end that always leads, and a rear that merges into the line of coaches. In such cases the whole train forms a design, and a common approach has been to 'style' the front into an attenuated nose, using the projecting space for auxiliary equipment.

British locomotives (and most European ones) however are double-ended general service machines which may be employed in many different roles. Express passenger coaches or mixed goods will be hauled by the same locomotive with Janus-like versatility. The technical and aesthetic requirements are thus very different from those of multiple-unit stock or special trains like the *Trans-Europ Expresses*, and British locomotives are beginning to evolve a compact form of end which owes nothing to aircraft or automobile practice.

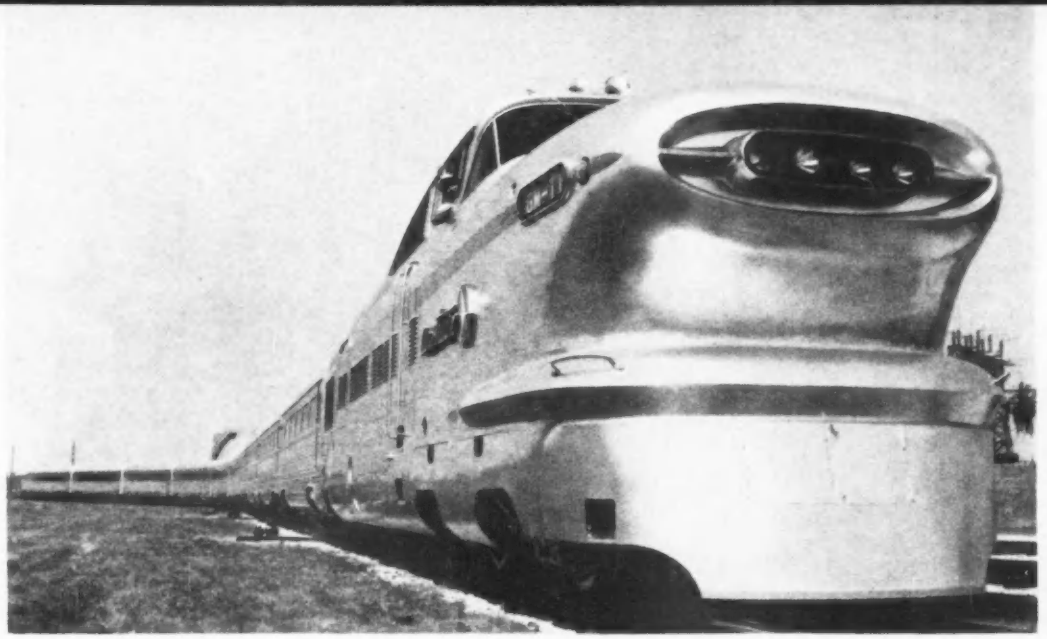
The remaining part of the designer's problem is to find a form that will accept the mass of impedimenta which is attached to the front of a locomotive. The white marker discs, that



varied from region to region, are being replaced by a four figure route-indicator box, which is a combination of the function of these discs and the train numbers used by Western and Southern Regions. The box is 4 ft wide, with 12-inch figures. Where it can be designed as an integral part of the locomotive it will

The German *V200*. The loading gauge allows enough height for the cab to be placed high up, giving the design an impressive scale which is difficult to achieve within the British limits.

Courtesy German Federal Railways



The locomotive as a symbol – of speed, power and efficiency – is easier to express when it is an integral part of the complete train and when the limitations on height and length are less rigid than they are in Britain. But a little puffing shunter has more of the symbolic railwayness within it than the stream-lined front end of this American experimental train.

be a most important feature; where it has to be added to existing designs it will often be merely another excrescence.

Other items are: tail lamps, oil lamp brackets, grab rails, foot steps, named-train boards with their brackets, and sometimes jumper outlets and holders (see page 37).

Air intakes The position of these is governed by the siting of the cooling equipment and the places in which the structure may be pierced. Thus electric or diesel-electric locomotives often require ventilators over the bogie centres in positions where these voids are too close to the cab for visual comfort; or a large radiator may be most easily supplied by a door shaped opening which cuts right across the lines of the body. Sometimes this will extend across several frames, or it may show the diagonal bracing (see page 37).

However, even when the engineers have been able to contrive the ventilation systems so that the air intakes do not disrupt the lines of the locomotive, they remain voids. Louvred openings, therefore, are substantial elements in the design.

Roof Where air intakes have to be extended above the flat part of the side so as to be in the lower part of the roof, the situation is even more difficult. Louvres barely keep out the rain and one looks straight up through them. Exhausts are on the very top and present no problem.

Electric locomotives with overhead gear must house their pantographs in a well in the roof. This makes a pronounced notch in the roof, with the necessary headroom in the cabs rising at the ends. The well cannot be enclosed and in high voltage locomotives it will also carry a quantity of other electrical equipment (see page 40).

Paint Except in very rare cases, the body sides will be cleaned by passing through washing machines, with a minimum of hand cleaning. The British Railways standard locomotive green was chosen with this well in mind, and the new blue for electric locomotives is essentially a hard wearing colour. We must accept that roof areas will be dirty, and that the underframe parts will be browned with brake-shoe dust. There is a prevalent thought that untidiness in design can be masked by lining bands or a fashionable 'speedy' look imparted by arrows and a V neck line, but British designers have usually kept their colour schemes severe and in broad areas.

The symbol

By far the most subtle of the designer's problems is to know what a locomotive should look like.

Its appearance has to be moulded or modified and detailed so as to produce a desirable impression on the public, train crews and railwaymen in general. None but the drivers will ride in the locomotive. The rest are not direct users, and may have less real contact with it than with a municipal dust cart.

Yet the symbol of the 'engine' is like a badge of office, superseding in importance the great works of civil engineering or the trains themselves. The *Flying Scotsman* or the *Bristolian* are timetable entries until they bear their names on a *LOCOMOTIVE* and a little puffing shunter has more of the symbolic railwayness within it than the powered nose of a multiple unit train.

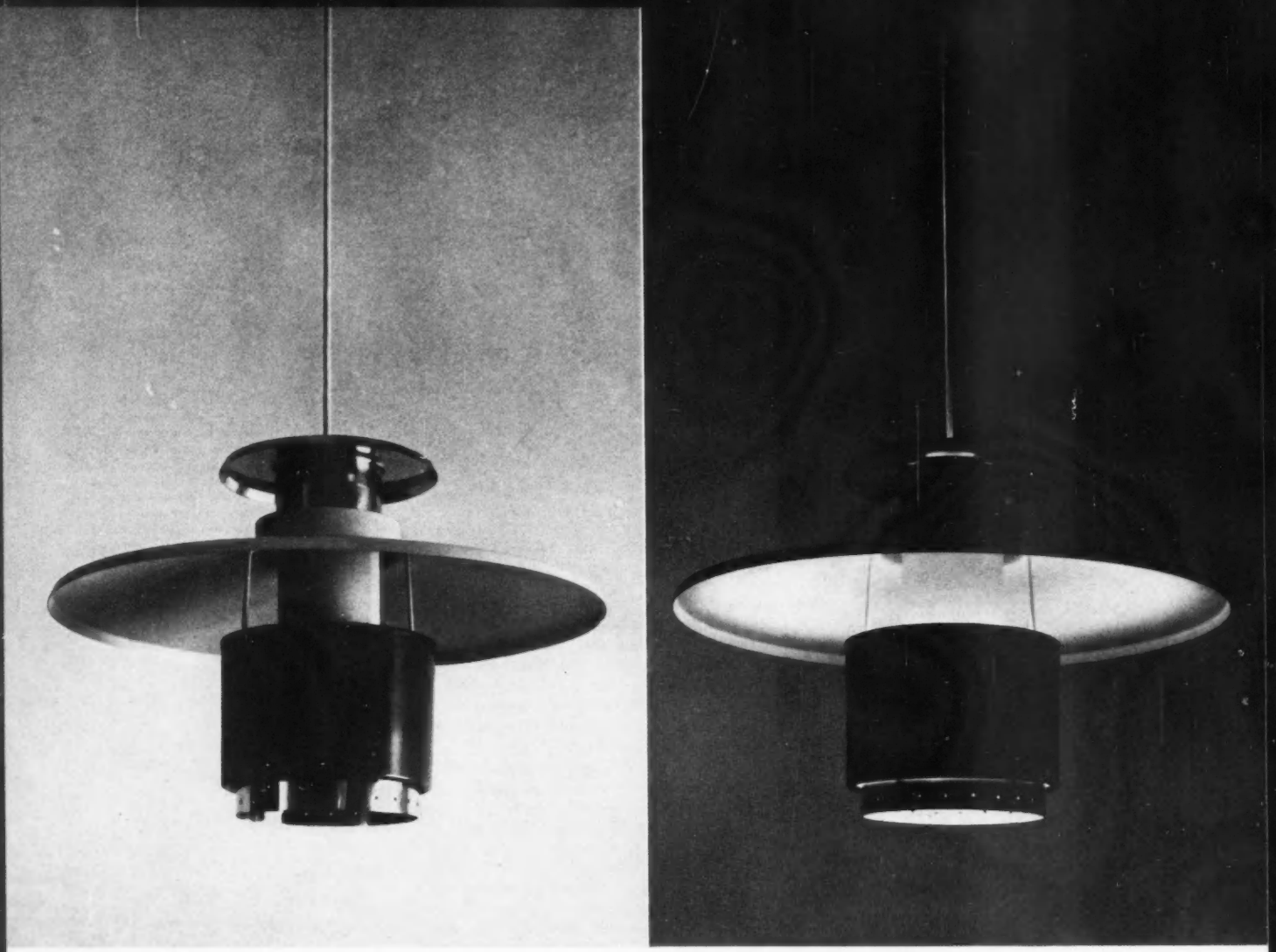
When goods are for sale – even if they are heavy capital goods – it is possible to get some guidance on their ideal appearance by reference to a real, potential or imaginary user. Such tests cannot here be applied, but there are three pointers or indications of desirable factors which can be logically deduced:
(a) The speed of a train is defined in the timetable, yet this speed needs to be remembered. We can no longer rely upon a purely mechanistic form to suggest speed, as the steam locomotive could do when it was being formed and had no peer; while borrowed associations from very high speed vehicles would point to a poor comparative performance.
(b) The power must be expressed clearly, for a locomotive is pre-eminent on land in this respect, and a great power potential is commonly associated with a great margin of safety.
(c) The locomotive must appear to be efficient. To a public that has no means of judging the efficiency of performance or the precision with which it can be controlled, the efficiency of a locomotive must be deduced by analogy from the evident care and attention to detail.

Tradition

The Railway, as a way of life, is the nearest thing to a caste or a tribal allegiance that the industrial age has produced. It became respectable in 1825 and railwaymen now tend to be sons and grandsons of railwaymen. The design of any feature may be the professional concern of a large number of people; but it will also interest an exceptionally large number of other railwaymen and highly informed amateurs who are not directly involved. At its best, the effect of this wide interest and expertise is like the weight of public opinion that directs Parliament on great moral issues. At its worst it is reactionary.

The steam locomotive reached its greatest purity some time before its fullest technical development, though this has been halted by economics rather than decadence. The form in which the tradition was to develop was clearly stated when the *Rocket* won the Rainhill Trials in 1829. Had the *Novelty* won (it was the public favourite and showed more speed) the classic steam locomotive would have looked very different.

The problem now is that we are again at the Rainhill point, a starting point in a tradition, but in a far more complicated setting and with a faster pace of development.



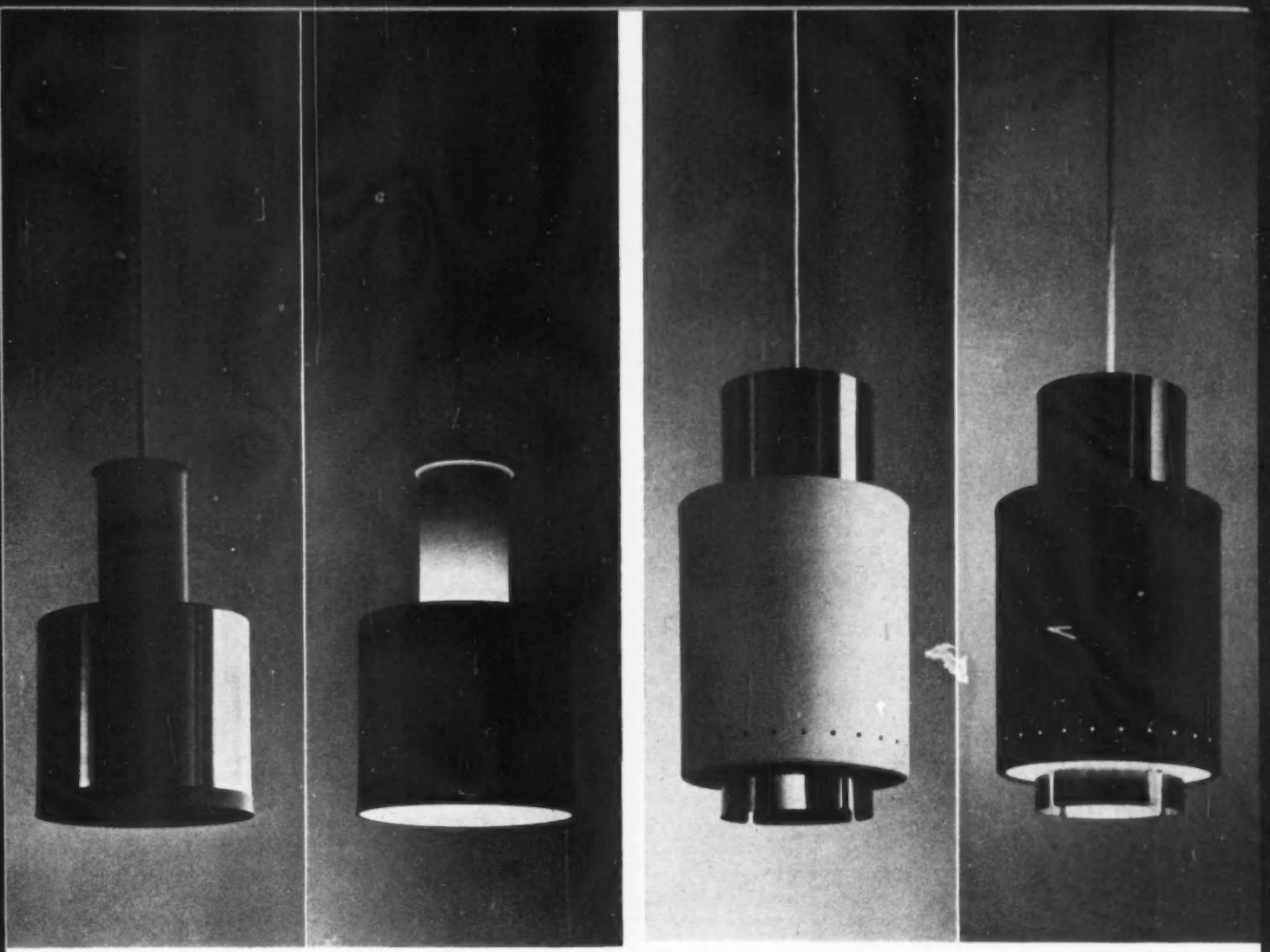
L55

DESIGN ANALYSIS 18

Pendant lighting fittings

L55 DESIGNER *Development Group, Architects and Building Branch, Ministry of Education.*
SL34 DESIGNER *Architects Division, Building Research Station.*
Chimney DESIGNER *Maurice Lee.*
MAKER *Fulford Brown Brothers (1929) Ltd. Prices from maker.*

The three lighting fittings which are discussed in this article have been designed to give local illumination. Their shapes have been largely determined by studying the functional requirements of lighting for this purpose, but the designers have also considered the need for visual interest during the daytime – a dual approach seldom evident in many of the fittings on the market. The remarks on the fittings in use are based on experience of both public and private installations. The manufacturer's *comments are on page 48.*



SL34

Chimney

MALCOLM J. BROOKES

Due to increasing public interest in lighting, the seasonal sales of lighting fittings have continued at record levels. Many manufacturers of domestic fittings realising this are leaping on to the bandwagon and providing the market with a welter of designs; some are good, some are indifferent but many are poor. Appearance only seems to be considered and function, in the main to control light, is largely ignored. Even then the results are disappointing. The three 100w fittings discussed here show how function and appearance have been considered as an integrated part of the same problem.

In the case of new office blocks or factory buildings there can be little excuse for bad lighting. Dr R. G. Hopkinson, of the Building Research Station, continually stresses that good lighting is a matter of balance between the brightness of the artificial source and its surroundings. The ideal application of such a concept would be lighting fittings individually designed for each installation; but for the majority of consumers this is not feasible. This gives the designer opportunities to introduce various types of fitting which, carefully installed, could be used in many different situations with good effect; and such fittings could avoid many commonly seen faults.

The three pendant fittings by Fulford Brown Brothers (1929) Ltd, which are the subject of this analysis, are designed to provide local lighting and although they may be used on their own, some situations will demand a measure of surrounding or general illumination (see *Lighting and Attention* DESIGN 129/50-51).

Objectives It is a relatively simple matter for the designer to predict the illumination on a working surface from a bare lamp source. But as soon as a reflector or shield is placed round the source then design problems begin.

It is necessary to avoid direct light from the lamp at angles near the horizontal. With an installation in which the fittings have small cut-off angles (ie the angle subtended at an observer's eye between the lamp filament and the horizontal) uncomfortable glare results. The designer must reconcile a multitude of technical and aesthetic requirements. Altering one dimension of the fitting often changes many of its characteristics.

The fittings Despite a strong family resemblance each

of the three pendant fittings illustrated has its own purpose, although each is intended to provide local downward light. In the following descriptions of the fittings the designers' detailed objectives can be seen more closely. Following each description are remarks on the fittings in use, which are based on the comments of individual users as well as several users who had installations incorporating the various types. In general both appearance and performance were praised, due, no doubt, to the designers' close attention to function and the fact that each fitting had a measure of brightness grading in itself.

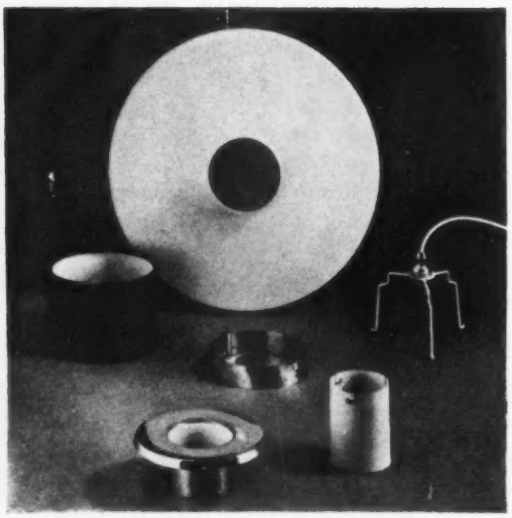
L55 A previous version of the *L55* was designed for installation in Woodside County Junior School, Amersham. Its function was to light the window bays in a classroom and, while providing local light, the designer's aim was to stimulate interest and assist in enhancing the character of the classroom as a whole. The present *L55* model has been installed in schools by the Ministry of Education. The greater majority of the light is reflected downwards firstly by the cylindrical aluminium shade around the lamp and secondly by the conical reflector. Only a small proportion of light is thrown upwards from the source.

To grade light outwards on top of the conical reflector, a small copper cap around the lamp holder reflects light downwards on to its top surface. And inside the lower rim of the shade is hung a circular, polished copper grader which gives a cut-off angle of approximately 45°. The exterior is illuminated by light reflected from the light grey inner surface of the shade. The aluminium sleeve around the neck of the lamp serves both to cover the lamp neck and to grade light down the underside of the reflector.

In use The design of the *L55* produces an interesting effect on the sleeve surrounding the lamp neck. This appears translucent when lighted due to fine upward grading of light. Although the brightness falls off rather sharply towards the underside edge of the reflector this does not detract from its pleasing effect. However, grading down the cylindrical shade is not so successful, leaving a dark band about 1½ inches wide above the lower rim.

The lower grader again is not too successful, and here the fitting seems to suffer from a conflict between the designers' ideals and the maker's craftsmanship. The grader is suspended by four brackets which locate in the spun-over lower edge of the shade. The original working drawing shows the spun edge closely gripping the grader bracket. In practice this does not occur and the rolled edge has a greater radius than the designer intended, as indicated in **1**, a sectional diagram of the *L55*. Thus not only does the grader float loosely on its supports but its surface is further from the inside wall of the shade than expected. Hence the lip cuts off too much of the light reflected from the inside surface of the shade, and the efficiency of the grader is reduced.

The six components of the *L55* pendant fitting



The idea of using as many as six separate items for one fitting, BELOW LEFT, can be justified in two ways. As the whole fitting can be taken apart quickly, maintenance is simplified; the parts can be easily assembled again if dislodged (which may occur with a fitting hung over a desk in a classroom). And the avoidance of any but simple shapes assists in manufacture. Nevertheless, as the individual parts are light in weight, when dusting the reflector it is easy to dislodge other parts and so scratch the otherwise well finished surfaces. At the same time unless the spider support and the hooks on the grader are accurately made, the parts may not locate squarely. This can sometimes be overcome by bending the brackets to fit.

SL34 In research into the lighting of work places efficiently the Building Research Station designed the *SL34* fitting. A modified version exists for direct ceiling mounting. Although the *SL34* has the simplest construction of the three types, **2**, the design still caters for gradations in light around the rim of the fitting. But in this case the grader consists of a ½-inch wide band of light grey paint on the external bottom edge, together with a 1½-inch band of dark grey on the internal edge. This treatment is designed to prevent the inside edge appearing too bright in comparison with the outer edge. In contrast to the *L55* fitting, which has a shade finished high-gloss blue, the shade of the *SL34* is polished copper which is intended to pick up reflections from the surroundings – especially from windows by day and other fittings by night – to add visual interest. The cut-off angle of this fitting is also 45°.

Above the shade an upper cylinder, painted matt white, covers the lampholder and neck of the lamp, and assists in grading light upwards from the top of the shade.

In use As with the *L55*, the sleeve around the lamp neck appears translucent when lit due to the upward grading of the light, and specular reflections from the shade's surface provide interest from any angle. This able use of copper is as successful as the designer intended, but a point to remark on is the thickness of the shade itself. It is of 18 swg copper and there can be few reasons why 22 swg or even a lighter gauge could not have been used. This would have reduced both the weight and material cost.

Again the designer has specified smaller radii for the top spinning of the shade and bends on the spider support than the maker has produced, in practice about ⅛ inch. This has led to the component parts not always hanging squarely from their supports which detracts from the geometric precision of the whole design. Without radical changes in the design, finer grading of light around the

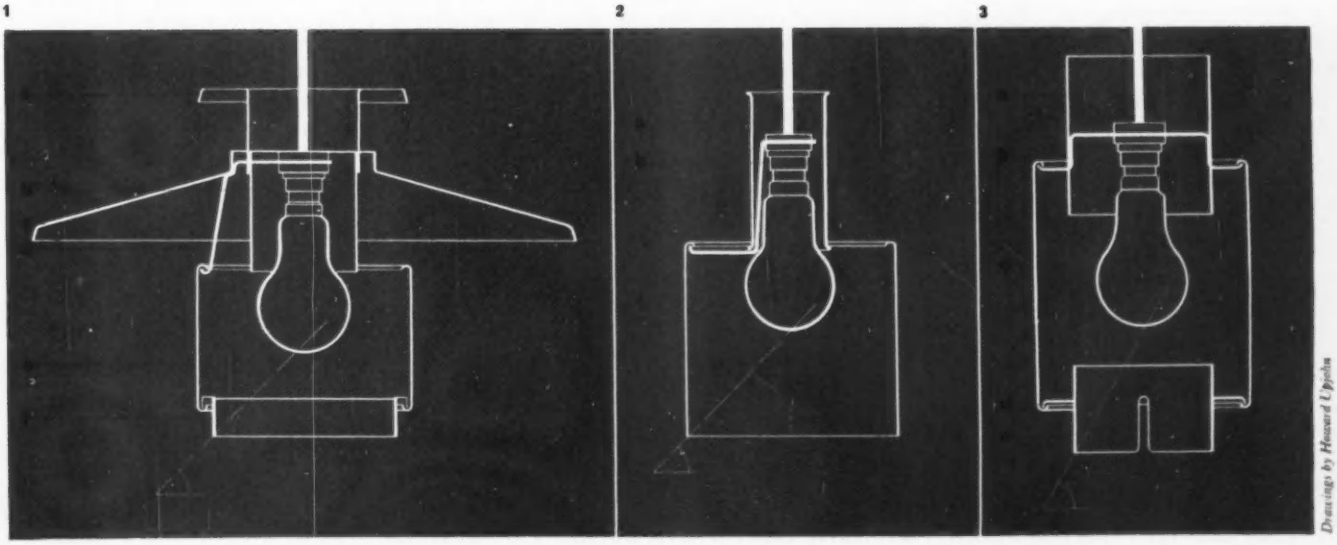
L55 fittings in use at Finmere Primary School. The illumination from one fitting is adequate for four children round the table. DESIGNER *Development Group, Architects and Building Branch, Ministry of Education.*

1 *L55* pendant fitting; six components. Top to bottom: (a) spun copper cap, polished and lacquered; (b) aluminium sleeve bayonet, finished light grey BS 9-099 matt, fixed to the cap; (c) aluminium reflector finished light grey BS 9-099 matt; (d) 10 swg wire spider to locate (a), (b) and (c) and support (e); (e) aluminium shade finished high gloss blue exterior BS 7-085 and light grey BS 9-099 matt interior, rolled at the top to accept the spider, and at the bottom to locate (f); (f) perforated copper grader polished and lacquered.

2 *SL34* local lighting fitting; three components. Top to bottom: (a) upper metal cylinder finished light grey BS 9-093 matt; (b) 10 swg wire spider locating (a) and supporting (c); (c) copper shade, polished and lacquered. The lower edge carries ½-inch wide band light grey BS 9-093 matt. Inside finished white BS 9-102 matt with 1½-inch wide band at lower edge finished dark grey BS 9-101 matt.

3 *Chimney* suspended spot fitting; five components. Top to bottom: (a) copper cylinder polished and lacquered; (b) 10 swg wire spider locating (a) and carrying (c); (c) aluminium shade finished light grey BS 9-093 matt, rolled top and bottom; (d) 10 swg spider located by (c); (e) slotted copper grader, polished and lacquered, suspended by (d).

The colour numbers referred to are those of British Standard 2660:1955, *Colours for Buildings and Decorative Paints*, British Standards Institution, 2 Park St, w1. Price 7s 6d.



Drawings by Howard Upjohn

edge could not easily be achieved, and on the whole the simple method of grading by using light grey external, and dark grey internal bands about the shade is fairly successful.

However, the author saw one installation which used over 20 of the ceiling mounting versions of the *SL34*, where three fittings had 150w lamps rather than the specified rating of 100w. In this installation the brightness at the rim of the fittings using the larger source, was considerably greater than the remainder – even approaching uncomfortable limits. Such a criticism of misuse cannot be directed at the designer or maker, but it stresses the need to adhere to the designer's specification.

Chimney Maurice Lee has designed the *Chimney* fitting primarily for suspension over displays and similar points requiring local lighting. It has been designed with a cut-off angle of 60° to give a spot light effect, and the perforations around the lower rim of the cylinder are intended to introduce sparkle. While the grader of the *L55* is supported by clips soldered on to the copper, that of the *Chimney* fitting hangs from a four-leg cross spider thus necessitating slots for assembly. The upper cylinder, besides covering the lampholder assembly, is designed to grade light upwards and reduce the contrast between the fitting and its surroundings.

In use There are two versions of this fitting in existence. One has an aluminium cylinder, finished matt, with copper graders top and bottom, and the other is all copper. The latter is the less satisfactory visually, lacking the contrast between specular and matt surfaces. On first seeing the lighted fitting the immediate impression is that the light is too coloured, the downward and upward throw being heavily tinted. But the eye soon becomes accustomed to this unexpected effect and in a short while it is acceptable.

The light gradations on the lower grader are more effective than on the *L55*, but due to a greater clearance between the shade and grader it is possible to receive specular reflections of the lamp just below the edge of the shade, see page 45. These are not bright but the reflections themselves confuse the symmetry of the coaxial cylinders. The holes in the shade do not assist the grading greatly and act more as a decoration than anything else. One user did remark that, hung low over his dining room table, the brightness of the light seen through the perforations can be excessive, because at certain angles a direct view of the specular image of the lamp could be seen.

Instead of using three-leg spiders to support shade and grader, as for the *L55* and *SL34*, the designer has used four-leg cross types. Such a system of support creates avoidable difficulties for the manufacturer as it necessitates cutting slots in the cylindrical grader so that it can be supported by the spider; and at the same time it demands greater precision in manufacture if four points are to be located in one plane, rather than three. In some of the fittings which were examined the upper spider was smaller than the diameter of the shade by $\frac{1}{8}$ inch; thus instead of locating in the spun-over upper groove, it rested on one edge and as a result the fitting did not hang squarely. It was not possible to bend the spider outwards as its vertical legs were constrained within the upper cylinder. When assembling it would be much easier to get three legs inside the shade than four.

Conclusions Several years ago Fulford Brown Brothers marketed a fitting, the *Percon* (*L52*), which heralded a strictly functional approach to light fitting design. The latest additions to the maker's range, *SL34*, *L55* and *Chimney* versions, continue this trend; but the designers have considered more closely the need for intrinsic interest in the fittings during daytime. The new models have yet to be perfected in detail, and several of the shortcomings are due to their being still in the prototype stage. Modifications are in hand which may improve the designs and answer many of the criticisms.

In the main the designers' aims – to control light without creating uncomfortable glare, and to provide visual interest in the fittings whether lit or unlit – are well realised. It is unlikely that all three fittings will have wide appeal in the domestic market, which too often seems preoccupied with decorative fittings at the expense of functional efficiency. The three fittings discussed are examples of successful collaboration between designers and a manufacturer in which the specific requirements of good lighting have been fully analysed before the design stage. Such an approach is rare in the industry and deserves wider application.

The manufacturer comments

In the main it would appear that the ideals of the designers have been attained and that only matters of detail call for comment. It will be apparent that the patterns under review demand not only precision tooling but also a high degree of craftsmanship in spinning. At the time when the series was reviewed, only preliminary trial runs had been produced, it having been considered unwise to complete tool-making at that stage. We would like to emphasise the following points:

L55 This design calls for a cylinder rolled inwards at both ends – a difficult production problem unless tooling costs for very substantial quantities are warranted. The prototypes are considered to be as good as reasonably can be expected. With tool production the spider supports and the hooks on the grader cannot fail to locate squarely, and the necessity for bending the brackets will not arise.

SL34 Copper is a soft material and in thin gauges is vulnerable and easily distorted. Polishing calls for care and consideration must be given to handling in erection and maintenance. For the cylinder walls we maintain that, despite a slight increase in weight, 18 swg is more practical than 22 swg. Production of this pattern from tools will ensure geometric precision of the design.

Chimney We agree that at certain angles of view the specular reflected image of the lamp is seen through the cylinder perforations, although this point was only mentioned in one instance in the article and on no occasion with us. This is a design matter but the fitting can be supplied to order with the cylinder unperforated.

Three-way spiders, rather than four-way, are to be preferred and we will readily make this amendment provided the designer agrees.

The first of these two articles (DESIGN 135/38-42) *described two present-day methods of relating the dimensions of equipment to the sizes of operators who will use it – 'body measuring' and 'space measuring' methods. The author pointed out the limitations of each, and indicated that misleading conclusions could easily be drawn from too simplified methods. In this concluding article, he describes the last two methods – 'fitting trials' and 'observation of behaviour'. Both provide more accurate results than either methods 1 or 2.*

J. CHRISTOPHER JONES
Industrial Design Ergonomics Laboratory, AEI (Manchester) Ltd.

FITTING FOR ACTION 2

Methods of relating equipment dimensions to body sizes, sensations and activities

Following the methods of body measuring and space measuring described in the first article there remain two other ways of determining equipment sizes – fitting trials (method 3) and observation of behaviour (method 4). The method of fitting trials is the most accurate one that can be used with limited time and resources. However, observation of human behaviour, the basis of all the human sciences, is the most valid of all the methods, but lengthy investigations and careful research are necessary for its true application.

Method 3: fitting trials

Fitting trials entail the use of a full size, fully adjustable mock-up. The aim is to find a position for each single item of equipment so that it is comfortable for every size of person who will use the final design. This method has two great advantages over the previous ones. It automatically takes into account most of the variable factors such as body movement, grip, and comfort sensations of the user that are omitted in methods 1 and 2. And it can be carried out without medical knowledge. For these reasons it is easy to apply as well as being the most accurate method which can be used in the present state of knowledge. If the fitting trials sequence, as described below, is followed completely, then care must be taken in selecting the right subjects from each of the various sizes of users who will operate the equipment.

The method is best described as follows:

(a) A very rough mock-up of the equipment is made with movable objects such as tables, chairs and piles of books, each being moved until a comfortable position for each item of equipment is found for a subject of near average size. (If possible this should be the designer himself.) Notes are taken of the distances to which each item can be moved without becoming uncomfortable. These dimensions can then be extended to cover the requirements of tall and short people by multiplying in simple proportion to the differences in height. (When there is little time available for design, this stage alone can produce far more realistic and useful information than can be obtained by the previous methods. If the subject is experienced in assessing his own bodily sensations in terms of user comfort, the results can agree surprisingly well with those obtained by completing the much more rigorous procedure which follows.)

(b) The range of body sizes to be expected in users of the equipment is then found from sources of information such as existing surveys (which were discussed in method 1) (see *Measurements for Designers* DESIGN 128/48-50); height and weight records if these are available for the group of persons who will use the equipment; carefully selected samples among the users concerned; and estimates by those who are experienced in anthropometric work. A typical distribution curve is shown in 1.

(c) With this information, it is possible to decide which range of body sizes is to be accommodated. It is usually

necessary to omit some of the very large and very small sizes if the majority is to be accommodated in reasonable comfort.

(d) From the selected size range, subjects are chosen who are predominantly at the extremes of the range for which the equipment will be designed, together with a number of average size, avoiding subjects of unusual proportion. (A rapid method of measuring body sizes is to photograph subjects against a wall marked with a grid.)

(e) The next step is to make a realistic mock-up of the equipment in which each relevant dimension can be adjusted over a wider range than that given at stage (a) with the rough mock-up. It is important that each dimension should be adjusted quickly as it is not possible to compare the sensations of different postures unless the sensations are experienced in quick succession. Typical mock-ups are shown in **2**, **3** and **4**.

(f) With the mock-up set in the original positions obtained from stage (a), every subject carries out the actions relevant to each dimension. As the dimensions are adjusted in small steps from well below the lowest tolerable position to well above the highest tolerable position and then back to below the lowest tolerable position, recordings of these points and the most comfortable positions are made for each setting, **5**. Only one dimension is varied at a time while the others are kept at the original settings.

(g) From the dimensions obtained a diagram can be constructed showing the range of lowest tolerable, most comfortable, and highest tolerable points for each subject for each dimension, **6**. Frequently the tolerances will be found to overlap, so the final settings can be chosen to accommodate all subjects without noticeable discomfort. In many cases such a discovery may make it unnecessary to have adjustable dimensions in the product itself.

(h) The final settings are simulated on the mock-up and each subject again carries out the actions required of the user of the equipment to make sure that these new dimensions do not include any uncomfortable combinations of positions or dimensions that were not covered by the fitting trials when adjustments were made one at a time.

The final settings are best tried out for long periods with each subject. This should minimise any discomforts that were not covered by the very short experiences of each dimension in the fitting trials.

This method was devised by Dr G. M. Morant of the RAF Institute of Aviation Medicine for fitting aircraft cockpits to pilots of various sizes. It is fully described in *Human Factors in Equipment Design.** The procedure in (f) and (g) for recording tolerances rather than the most comfortable positions is a modification of Dr Morant's method, introduced at the Industrial Design Ergonomics Laboratory, AEI (Manchester) Ltd.

Although the method of fitting trials is obviously more realistic than the body and space measuring methods it is open to a major criticism – settings selected by subjective judgment may not coincide with settings that are best for the user's mental and physical health. At present there are no complete answers to such questions as:

Will the same subject always choose the same settings?

Will two subjects of the same body size choose the same settings?

Are the settings chosen during a brief trial related to those that would be chosen after long experience of each setting?

Is existing equipment, to which the subjects have become accustomed, so influencing their choice of setting that the best fit is not obtained?

Is there any relation between the dimensions chosen by subjects and the dimensions that would give the least fatigue or the greatest efficiency?

The only way to avoid these difficulties is to use a method that measures the *effect* of each dimension on fatigue, efficiency or some other criteria which is directly related to the purpose for which the equipment is being used. Such a method is described next.

Method 4: observation of behaviour

Observation of human behaviour, the method of all the human sciences, is used here to seek relationships between equipment dimensions and the well-being or efficiency of the user. Only in this way can the basic difficulty, that of deciding when a dimension or posture is suitable or not, be overcome. This is a much slower and more costly method than any of the others and is therefore more suitable for long term research than day to day design work.

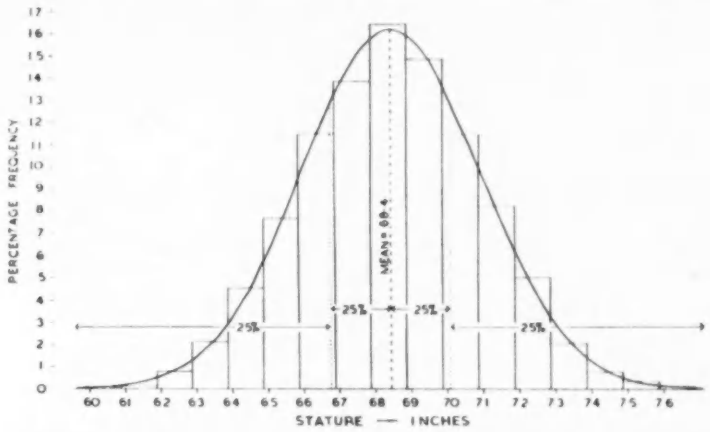
All kinds of behaviour may be observed, external behaviour such as body movements, and job performance or interior behaviour such as heartbeat and muscle activity. The method in each case is to alter the dimensions systematically while the equipment is in use until some significant changes in behaviour are observed. It is then possible to select dimensions that are beneficial to those concerned.

Thus the designer is faced with four methods each having drawbacks: method 1 is only useful for rough calculations; method 2 has strict limitations, omitting many human factors; method 3, although giving the best result with limited time and resources does not necessarily provide for any agreed criteria of efficiency; and method 4, which overcomes the latter objections and so gives the most valid results, is complex, demands expert skills and knowledge, and is both a slow and a costly method. With wider research into the underlying principles briefly mentioned above increasing use could be made of this latter method of designing equipment for human operators.

*G. M. Morant, *Body Size and Work Space, Human Factors in Equipment Design, Ergonomics Research Society Proceedings*, Volume 2, pages 17-24, edited by W. F. Floyd and A. T. Welford, H. K. Lewis & Co Ltd. £1 1s.

method 3

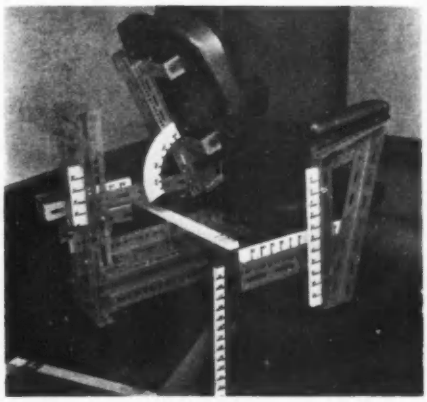
1



1 The percentage height distribution for a total of 2,241 aircrew recruits is shown in this graph. It must always be emphasised that each particular user population will have differing body size distributions. The mean height here is a good inch taller than that for the male population of Britain as a whole. Copyright Dr G. M. Morant.

2 A fully adjustable seat used for fitting trials at AEI (Manchester) Ltd. Each dimension can be varied without altering any other of the pre-set positions of seat, arm rests, etc.

2



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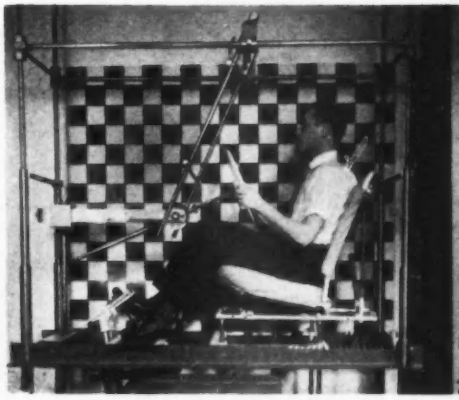

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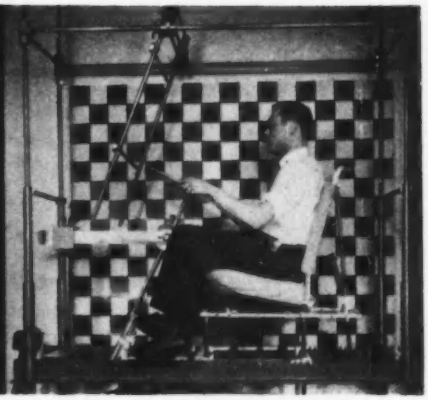

3, 4 Regie Nationale des Usines Renault was one of the first manufacturers to apply the method of fitting trials to industrial design. The mock-ups illustrated are used for simulating driving postures in cars, trucks and train cabs. They were exhibited during the Zürich conference *Fitting the Job to the Worker* 1959. They are the work of Dr A. Wisner who acts as consultant to Renault, and is one of the few physiologists employed by an industrial concern to influence product design.

5 The lowest tolerable, most comfortable and highest tolerable positions are recorded as each dimension is increased and decreased over the whole range. A diagram for each dimension can be constructed, as indicated here, to show the dimensional limits for a single subject in the positioning of one item of equipment.

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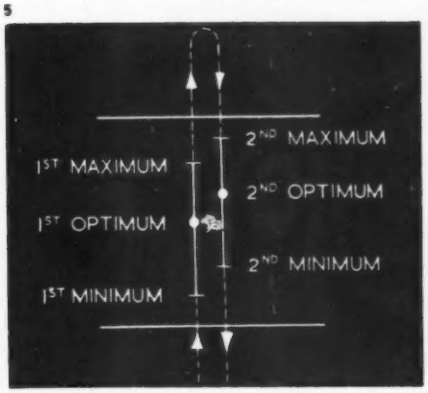
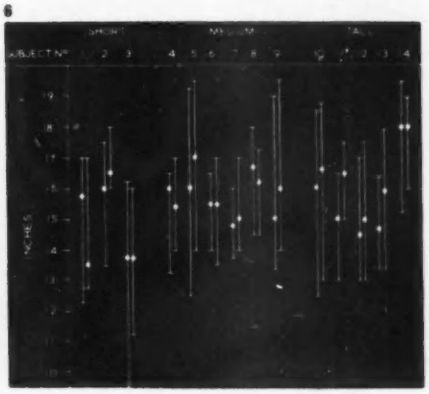


6 The dimensional tolerances for all subjects are charted. This particular diagram shows the seat height preferences of a particular group of industrial operators. These results agree well with the more theoretical researches which have led to Dr Bengt Åkerblom's optimum seat height of 16 inches (shown in **7**). **5** and **6** from AEI (Manchester) Ltd.

6



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method 4

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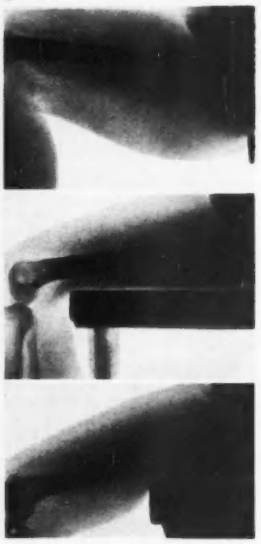


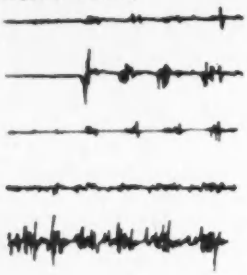
7, 8 The height of the Åkerblom chair is based on the observation that existing chairs caused compression of the underside of the thigh, and the conclusion that such compression is harmful to the sitter. The x-ray plates, **8**, show how the seat of a badly designed chair can produce compression on the underside of the thigh in three different ways. **7** Åkerblom chair (model *A15K*) DESIGNER *Gunnar Eklöf*. MAKER *AB Nässjö Stolfabrik*.

9

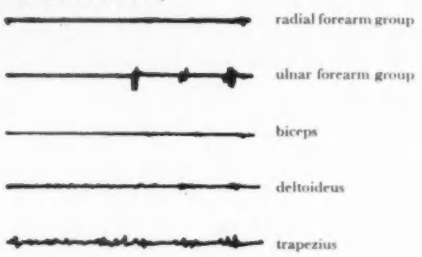
10

9, 10 When using a typewriter electromyographic recordings of the activity in various muscles in the hand, arm, and back, show a great reduction when the typewriter is mounted in a low position. This research was carried out by Dr Arne Lundervold at the Department of Neurology, Oslo University.

High muscle activity



Reduced muscle activity



11

11 At the Furniture Development Council an apparatus for recording changes in sitting posture has been developed, called the 'wriggle meter', together with a device to measure pressure between the body and the upholstery. It is expected that the number of movements made while seated, and the distribution of seat pressures, will provide a quantitative method by which seat dimensions and upholstery can be realistically compared. The Furniture Development Council has designed and made these devices to assist its research programme.

Belgium

Store enterprise

The Brussels department store, Au Bon Marché, recently held an exhibition of designs from 14 countries. The background to this event, and its significance in terms of the retailers' place in promoting higher design standards, are discussed in the following article.

JOHN E. BLAKE

The idea of holding international exhibitions in department stores is not particularly new. Several of the larger stores in London, for example, are well known for the wide range of high quality goods from many different countries which they hold in stock and which they exhibit in special displays when a new collection is introduced. Nor is it new for stores to hold exhibitions of goods selected, not by the store's buyers, but by some outside body. The series of Design Centre exhibitions in British stores outside London, with goods chosen by the CoID and the Stores' buyers, are recent examples. But when a store holds an exhibition of goods from 14 countries (including Great Britain), leaves the choice very largely to each country concerned, and leaves much of the organisation to a non-commercial body in its own country, then one begins to wonder if the store management is not acting out of sheer bravado.

There is little doubt, however, that the Au Bon Marché store in Brussels (claimed to be the biggest individual store in Europe) undertook this important and possibly unique event with no such purpose in mind. Certainly this is the centenary of the firm's birth, and as such some celebration was needed. But fundamentally it was a piece of intelligent, long term policy making, calculated to help strengthen Belgium's economy on which the prosperity of such a store ultimately depends. Belgium, already one of the freest markets in Europe, and a member of the six Common Market countries, is keenly aware of competition from other European countries which her manufacturing industries are already facing and will face increasingly in the future. By showing the best that is produced from many parts of the world, Baron Vaxelaire, the stores' managing director, hopes to stimulate a public demand for good design which in turn will influence Belgian manufacturers and raise standards all round. The public, he believes, is now ready to accept goods of a better standard, but first it must be shown what good design really is.

The problems in staging a display of this nature were formidable and often unforeseen. All the goods shown are available in Belgium though only about half can be bought

direct through Au Bon Marché. Concessions for certain goods already existed with other shops or agents, and in such cases special arrangements had to be made. Some domestic appliances were unsuitable for the Belgium market – much of the American kitchen equipment for example would have been so expensive that nobody could have afforded it – and so original choices had to be modified.

The arrangements for the exhibition were made on behalf of the store by the Belgian design organisation Le Signe d'Or. Foreign organisations which are members of or were recommended by the International Council of Societies of Industrial Designers were each invited to submit 40 items of which about 20 were chosen for display, the final choice being made on the basis of each product's suitability for the Belgian market.

Judged by standards of major international exhibitions or trade fairs, the display had a hasty and somewhat flimsy appearance, which reflected the problem of converting 4,000–5,000 sq ft of normal store space into a unified exhibition in the two or three days available. Yet the use of gauze screens and awnings, with products displayed on cubical and cylindrical rostrums of varying heights, was a welcome break from the overworked space frame techniques which are now universal. But the demarcation between one country and the next was vague and the unsuspecting visitor must have found difficulty in knowing which country's products he was looking at. To more informed eyes many of the products would have been familiar. This is perhaps the weakness of an exhibition of designs chosen by national design organisations, for the same group of products tends to be selected again and again – a weakness which would not be apparent to the majority of visitors.

Largely because of this familiarity of the exhibits there were few indications of significant national developments. The Scandinavian countries seem to be settled comfortably into a craft based idiom from which they show little sign of moving. The best of German designs continue a tradition of severity in engineered products, while the Americans remain as stylish and immaculate as ever. It is in France and the Benelux countries that the greater strides are now being made. From the Technès office particularly a variety of products are appearing which have a distinctive and sturdy character that owes little to other countries. Like the Belgian and Dutch equipment shown in the exhibition these designs seem to have a logic which stems often from an inventive solution of basic engineering problems.

The successful operation of the two new trading groups in Europe – the Six and the Seven – will depend increasingly on regular interchanges of ideas along the lines pioneered by Au Bon Marché. Representatives of design organisations who attended the exhibition were already discussing the possibility of a new exhibition of designs from the Common Market countries. Should not the members of the Outer Seven now be considering a similar exhibition among themselves? The final ratification of the treaty among the Seven will take place in two months, and it would be appropriate if Britain were to arrange the first of what could become a series of such displays.

Britain's position among the Seven is not unlike Belgium's in the Six; both will be competing with countries whose design standards have gained them international repute. It is therefore important that we in Britain should be aware of the quality of the competition we shall face, with goods from Sweden, Denmark, Switzerland and the others shown alongside our own.

To place such exhibitions directly within the context of the market place is sensible, and calls for initiative from a prominent British retailer similar to that already shown by Au Bon Marché in Belgium. The CoID would be glad to lend support to such an enterprise. Much could be learnt from the Belgium experiment, not the least of which would be the need for more adventurous selections, and the presentation of full details about each product.

2 General view of the exhibition from the British section, containing products selected by the CoID. Gauze fabric was used to form an awning as well as dividing screens between groups of exhibits. The display was arranged by André de Poerck and Jean Iwens. Some of the individual products exhibited by various countries are shown on the following pages.

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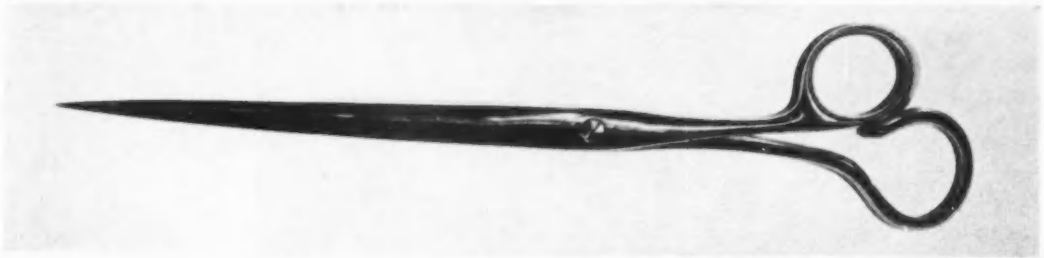

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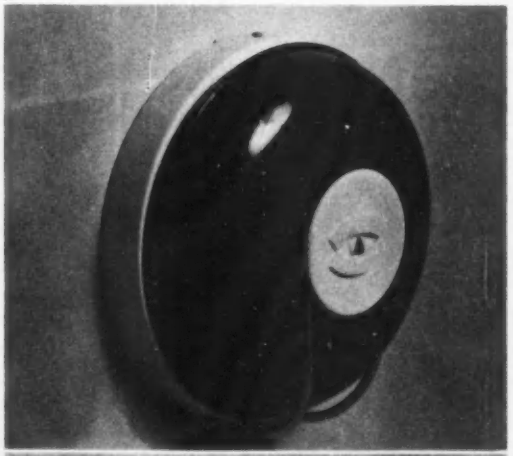

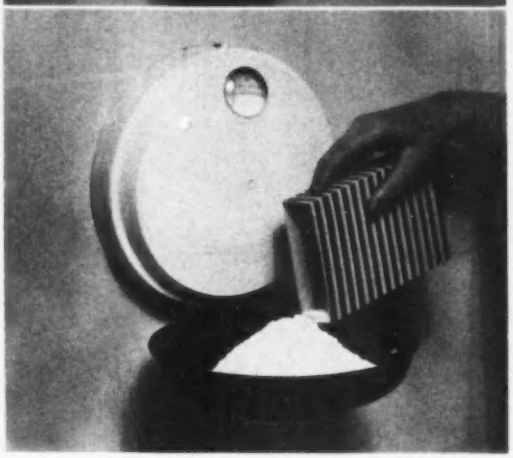

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continued

3 *Italy* These scissors received an honorary award in the 1959 *Compasso d'Oro.* DESIGNER *Professor Antonio Campi.* MAKER *Ermen egildo Collini.*

4 *Denmark* Coffee service with double-walled cups and jug which are designed to insulate the hot liquid from the hand and dispose of the necessity for handles. DESIGNER *Axel Brüel.* MAKER *Porcelaens fabriken 'Danmark' AS.*

5 *Germany* Wall mounted spring balance. The pan folds up out of the way when not in use. MAKER *Jupiter GmbH.*

6 *Austria* Two designs from a range of crystal table glasses. DESIGNER *A. Soulek.* MAKER *Toriler Glashütte, C. J. Riedel, KG.*

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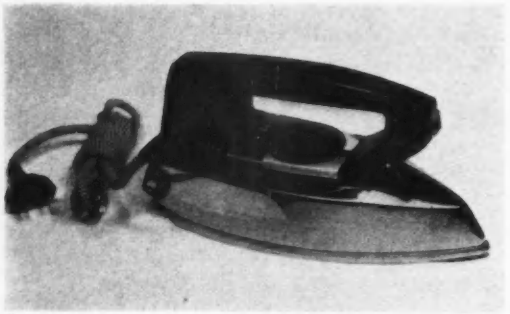

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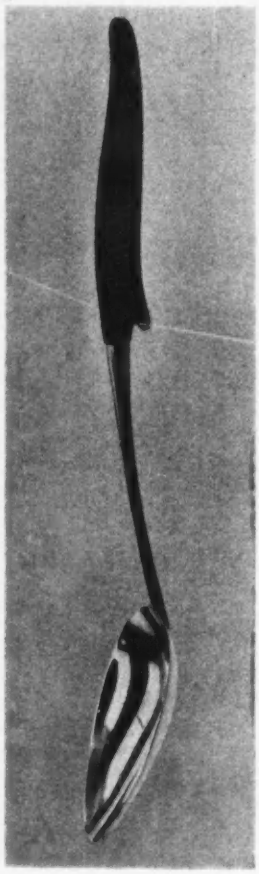

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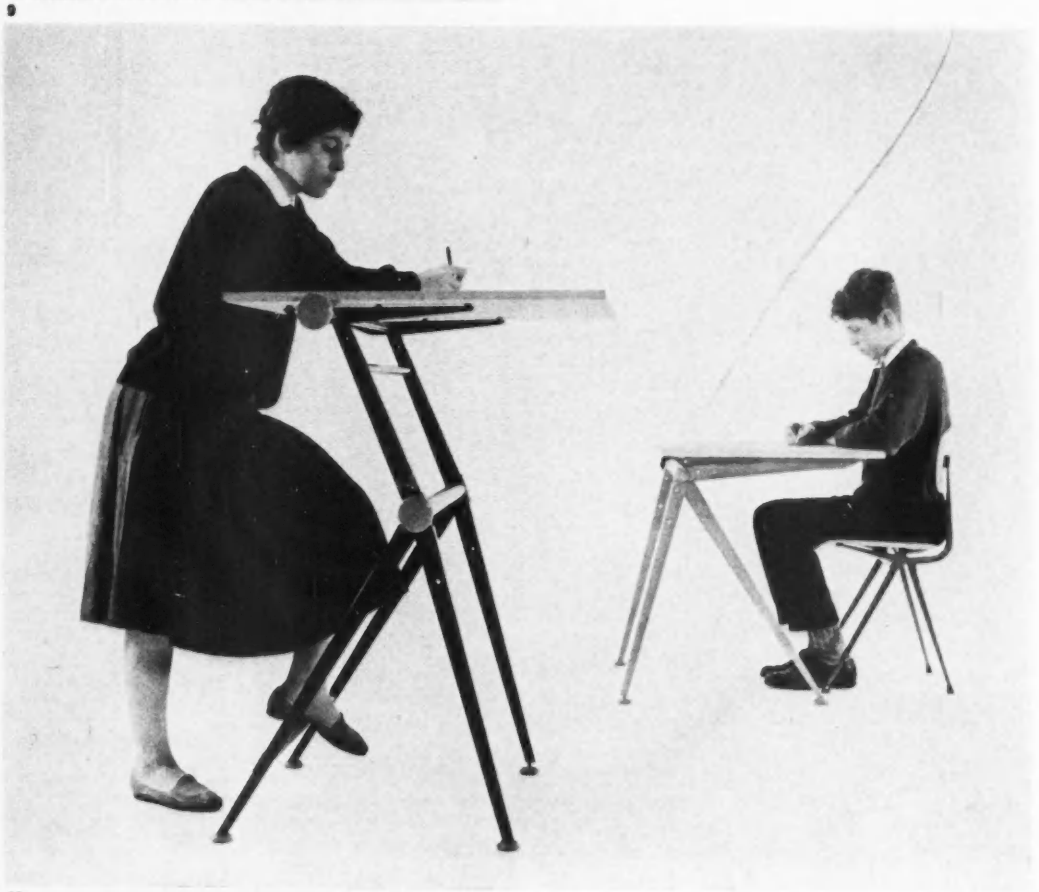

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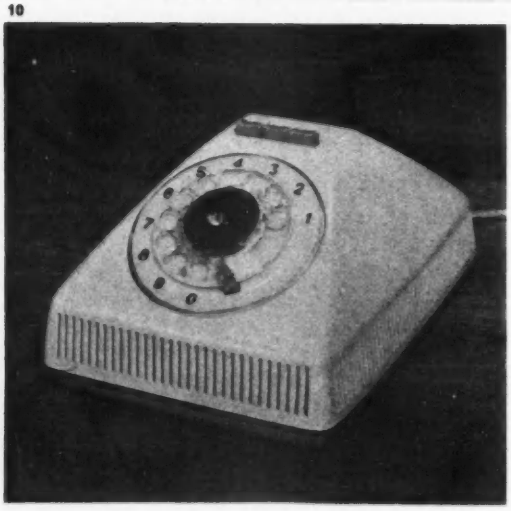

7 *France* Electric iron. DESIGNER *J. Parthenay of Technès.* MAKER *Sté Calor.*

8 *Holland* Serving spoon, part of a range of cooking utensils which received a *Signe d'Or* award for 1959. DESIGNER *G. Beran.* MAKER *NV Gerritsen & van Kempen.*

9 *Holland* School desk. The illustration shows the wide range of adjustment that can be achieved. The design received a *Signe d'Or* award for 1959. DESIGNER *W. Rietveld.* MAKER *NV de Cirkel.*

10 *Sweden Ericovox* loud-speaking telephone. MAKER *L. M. Ericsson.*

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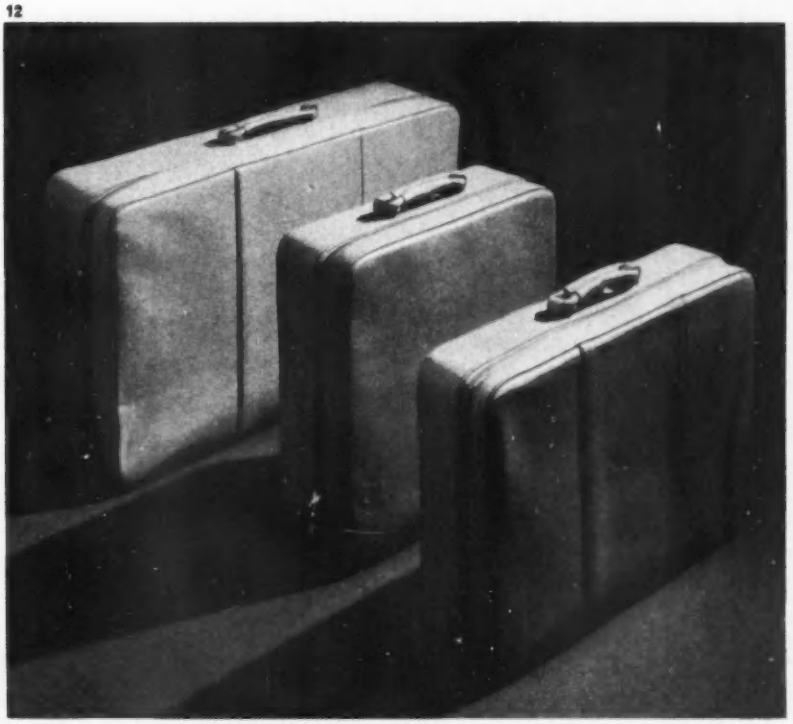

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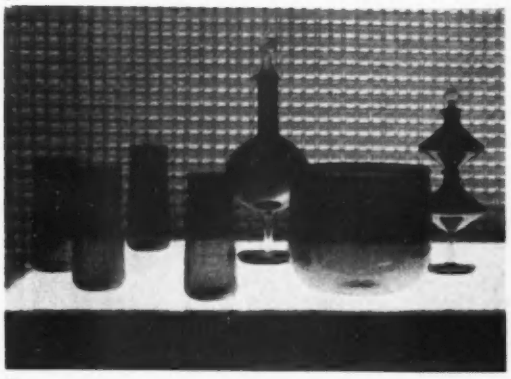

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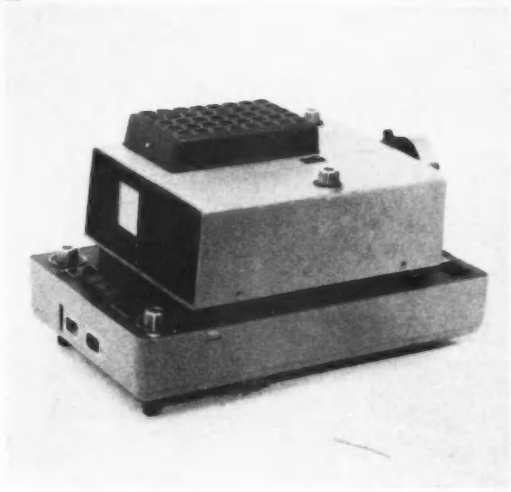

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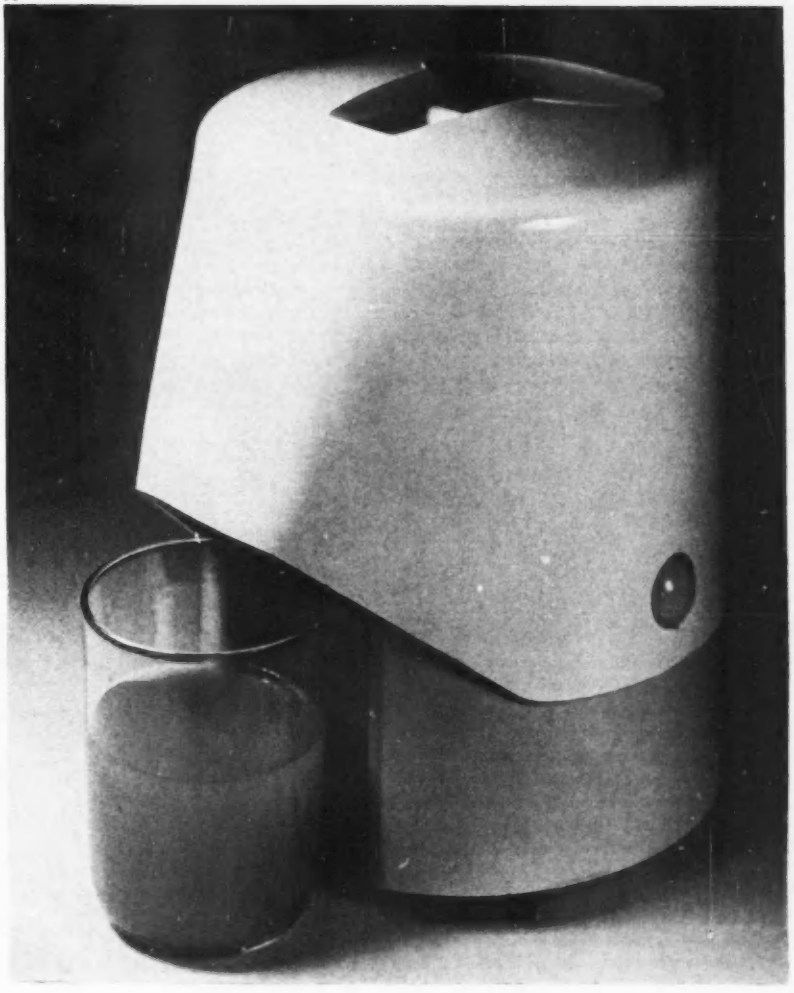


11 Part of the Finnish exhibit with products chosen by the Finnish Society of Crafts and Design. Glassware designed by Nanry Still for Riihimaen Lasioy is shown against a screen of woven cane and plastics made by Metsovaara.

12 *Great Britain Prestwick* range of cases in English coachhide lined with rayon. The overnight case, *centre*, is waterproof lined and is fitted with toilet bottles and pockets. The range received a *Design Centre Award*, 1958. DESIGNER *K. H. Paterson*. MAKER *S. E. Norris & Co Ltd.*

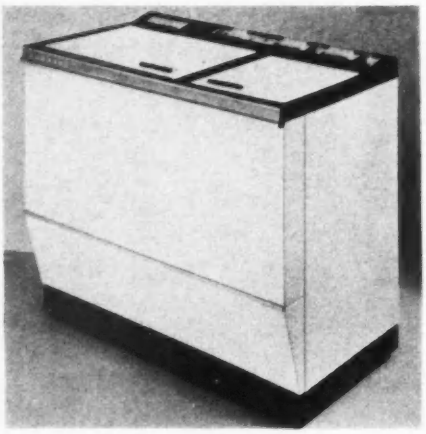
13 *USA* 35 mm automatic slide projector. DESIGNER *Harley Earl Inc.* MAKER *Argus*.

14 *Germany* Centrifugal fruit press. DESIGNER *H. Ehring*. MAKER *Novalux Gesellschaft, Brandenberg & Co.*

DIRECTIONS

A miscellany of new products and ideas from abroad

Germany: washing machine



The major feature of this washing machine is the choice of nine fixed washing procedures based on a combination of water temperature and length of wash; the desired washing time begins when a pre-set temperature has been reached, each of the nine procedures being selected by push button. The machine represents a considerable advance in automatic control over other Continental models. The washing action consists of a drum revolving on a horizontal axis; the clothes are washed and rinsed twice and continue to revolve until they are damp dry. The clothes have then to be transferred to the spin drier for final drying. The washing process permits a low heating current of 2·8 kW so that no permanent connections are required.

MAKER *Gebr. Sharpf Komm-Ges.*

USA: education displayed

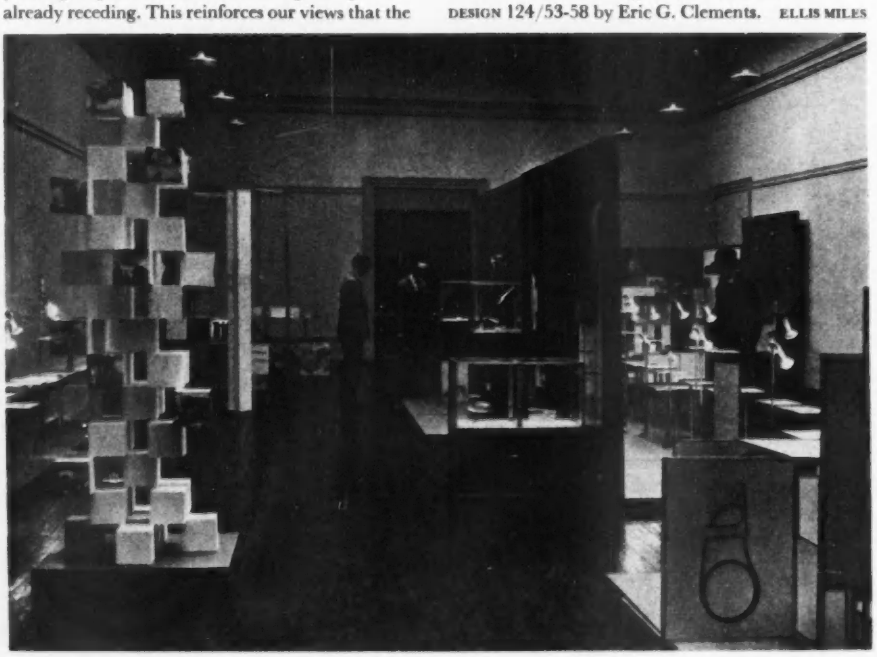
A travelling exhibition, sponsored by the US Information Services, made its début in this country at Leeds recently and subsequently was on view in London at the USIS Gallery in Grosvenor Square. The building of the 3,000 sq ft exhibition was undertaken as a group project by eight senior students from eight different American universities and schools assembled at the Institute of Design, Illinois Institute of Technology. One of the primary aims of the exhibition, according to Stefan Munsing, US Cultural Affairs Officer, was to proclaim the *existence* of industrial design education in the US.

The exhibition displayed, on rectilinear panels and cubes, some 220 photographs and 30 models chosen by the students from work submitted by design schools throughout the country. The work was arranged in groups: basic exercises, small appliances, furniture, communication and photographic equipment, transportation and a pictorial record of the building of the exhibition itself.

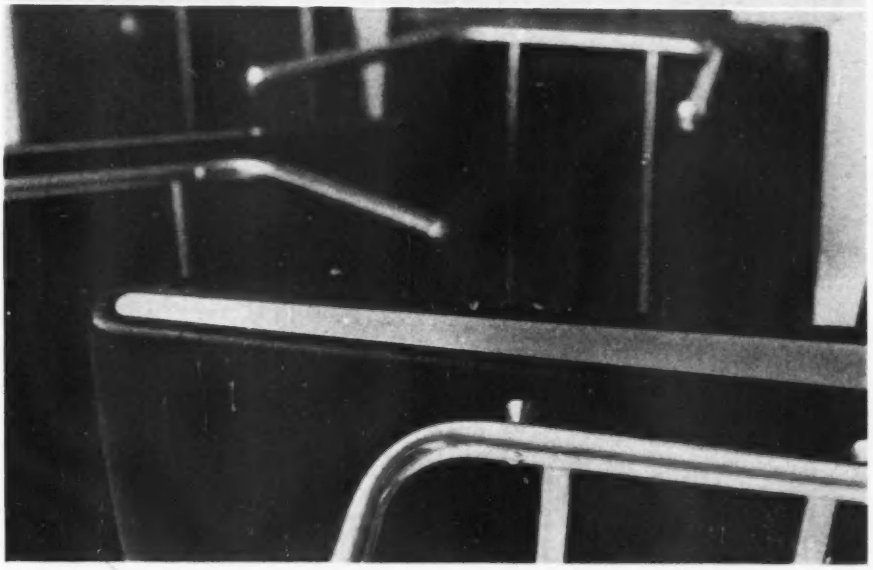
It was not easy to see this exhibition through the eyes of an interested but uninformed European. The aim was not made clear; as an exercise in visual communication it was not successful. While the interested layman in this country would gather a general impression of product design at student level, those concerned with design education would have liked to see sections devoted to the curricula of typical schools. Although some of the models were cramped in pilfer-proof cases like pike in goldfish bowls, they all showed considerable skill. This we have come to associate with the flexible craftsmen and ingenious improvisers of North America. Were these models made by students? We were not told. There is, of course, much to be learned from making finished models and sketch models are indispensable, but one is sometimes tempted to think that in Britain we place too much emphasis on the making of highly finished models by design students and much time is wasted. Model making is really a separate and highly skilled profession.

Most of the actual designs we may feel we had seen before. Misapplied streamlining was almost absent; also surface decoration other than the usual carefully placed trade names and symbols. Taste too, we may feel, changes more rapidly than we sometimes imagine. It is interesting to notice that the delicate crispness of many of these designs of two years ago represents a fashion that is possibly already receding. This reinforces our views that the teaching of an analytical approach based on a broad background will provide a firmer foundation for a career in design than an accomplishment in rendering and superficial styling.

As work was not credited to individual schools it was not possible to assess the results of the considerably different approaches of the various schools. Some placed more stress on engineering, some on merchandising, and others on humanistic and functional problems. The aims and teaching methods in several design schools were discussed in DESIGN 124/53-58 by Eric G. Clements. ELLIS MILES



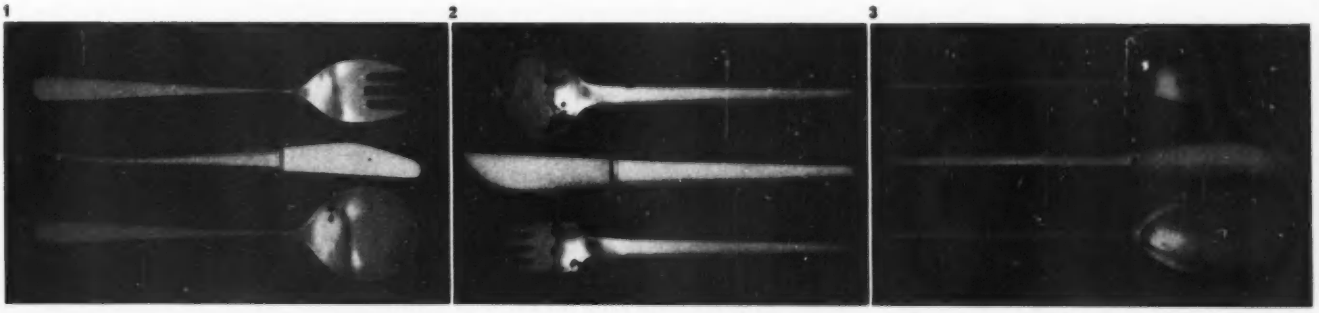
THE BOARD YOU CAN



Denmark: chair and stool

This chair and stool reveal the characteristic depth and width of the seat and back which are typical of Scandinavian design, and an overall simplicity which is extremely elegant. Each unit is mounted on steel legs and is upholstered with foam rubber. These particular pieces are covered with black oxhide and are finished with a steel inlay at the sides – a detail which contributes much to the elegance of the design – but other types in a woollen fabric covering (without the inlay) are also available. The designer was recently elected an honorary member of the Faculty of Royal Designers for Industry (DESIGN 134/67).
DESIGNER *Hans J. Wegner*. MAKER *Anker Petersen, Copenhagen*.

1 2 3



Germany: cutlery competition

Württembergische Metallwarenfabrik, the German manufacturer of glass and metalware, recently announced "a competition for contemporary metal cutlery" open to students of schools of art and technical colleges in the Federal Republic and West Berlin; the object being to stimulate interest in the problems of industrial design. A secondary consideration was the company's desire to buy designs for production, to augment the work of its own design studio.
The conditions of the competition asked for a three-piece place setting of which the spoon and fork had to be designed for production from single pieces of metal. The knife was required to have a hollow handle with inserted blade.
Seventy-eight entries, a number much greater than was expected, were submitted and of these seven received awards, the first prize being DM 2,000. A further six designs were bought for possible future production. The winning design by Fritz Weidler, **1**, was to have been put into production, but this has since proved to be impossible as the design of the knife handle calls for a forging operation; WMF knife handles are normally soldered together in two shells and Mr Weidler has been given the further task of modifying his design to conform to normal WMF production methods. It is to be hoped that this procedure will not result in a poor substitute for what seems to be an unusual and imaginative design.
1 First prize. DESIGNER *Fritz Weidler, State High School for Precious Metal Work, Swabia*.
2 Second prize. DESIGNER *Dieter Matzner, Trade Craft School, Brunswick*.
3 One of three third prizes. DESIGNER *Nicolai Dodel, Technical School, Cologne*.

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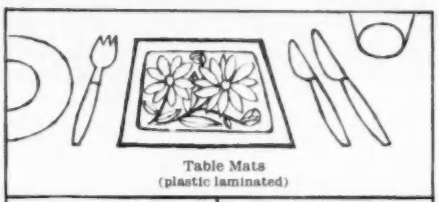
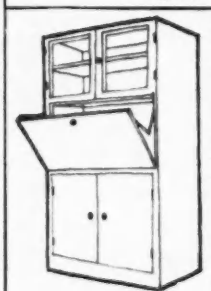
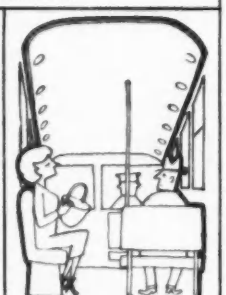


Table Mats
(plastic laminated)



Kitchen Cabinet Flap
(reeded hardboard)



Vehicle Roof Linings
(plastic covered board)

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A note of contention

Like its predecessor, the new £1 note has met with disapproval among designers and laymen alike.

Newspaper files of November 1928 (when the 'old' note first appeared) make familiar reading: ". . . the general comment on the notes was that they looked much more 'foreign' than the familiar Treasury notes." ". . . They are not the improvement that in these days of the Design and Industries Association and the Royal Fine Arts Commission we had a right to expect." ". . . the note reminds us of the American 'greenback'." ". . . The new notes are just another example of the foreign element with which we are becoming imbued."

It is hard to be objective about sudden changes in old and trusted friends. Familiarity breeds – not contempt – but an indulgent blindness.

Much of the criticism of the 1960 edition has centred on purely utilitarian matters. Why has the position of the serial numbers been changed? Did not the Bank of England know that bank clerks count notes by flipping through the top *right*-hand corners? And did not the Bank of England know that a change in size and weight means muddle and inconvenience during the two-year overlap period when both notes will be in circulation together? Why had the clearing banks not been consulted?

The Bank of England told me that the upper serial number had been placed to the left "to balance the artist's design". Feeling, perhaps, that this explanation conceded little to current thought on ergonomics, the Bank later pointed out that notes are in any case counted physically as individual sheets of paper without reference to their numbering. Even when notes are supplied in fresh batches to the clearing banks there is no guarantee that their numerical sequence is unbroken. The position of the numbers is immaterial. As to the inconvenience of handling, stacking and weighing notes of differing sizes, this was described as "temporary".

(For his part, the designer, Robert Austin – a rock of imperturbability in a sea of critical cross-purposes – reported that he had placed the serial number to the left at the Bank's request.)

The Bank mentioned a few days later that the portrait of the Queen appearing toward the upper right-hand corner allowed the bank clerk to check for counterfeits while he was counting. "The portrait of the Queen," said the Bank, "would be exceptionally difficult to counterfeit".

Somewhere, one felt, there had been kinks in the lines of communication.

In the department of aesthetics, the note did little better. On the strength of a partially obliterated black and white photoprint most of the national Press committed itself to a poor opinion. Emergence of the note itself brought little softening: "Like a dollar bill . . ." "Like a detergent coupon . . ." "Like a luncheon voucher . . ." Thus much had dollar-sub-consciousness survived in us since 1928; thus successfully had coupon designers imitated money.

But much of the criticism was of the variety generally described as 'informed'. "Why," said O. P. Milne, Chairman of the Royal Society of Arts, "did they alter it at all? I don't like it. It's trying to be modern and fails; it has a cheap look. The portrait of the Queen is very unhappily placed and the design of the reverse is 'bitty' and disorganised."

"Why," said Robin Darwin, principal of the Royal College of Art, "didn't they consult some outside body? There should have been a committee like the Royal Mint Committee for coins to advise on the production of the design."

Ernest Race, at that time president of the Society of Industrial Artists, said that he liked the new shape and size, the asymmetrical placing of the design on the paper, and the watermark; "but I regard the quality of the graphic design as most disappointing. This seems to be a hotch-potch of unrelated elements producing a confused and arbitrary effect which one cannot believe is unavoidable on grounds of security. The poor legibility can, I suppose, be justified by the fact that nobody wants to read a pound note anyway, but this offers little excuse for the lack of decorative quality in the lettering."

Sir Gordon Russell, president of the Design and Industries Association, said that the note had served a useful purpose. "It is," he said, "a perfect demonstration of the result of lack of co-ordination in designing. I suppose the first essential in a bank note is that it cannot easily be forged, but is it really necessary to make such a horrid typographic mess to ensure safety? If the lesson of throwing technologists and designers together at an early stage has been learnt, we may do better next time."

Sir Kenneth Clark, chairman, Arts Council of Great Britain, took a gentler view: "I don't think it is terribly good – or bad. Perhaps the portrait of the Queen is a little 'stiff-looking'. It is in the nature of the job that the design must be difficult to forge and this means that the designer is inevitably in the hands of the technicians who brief him. I am surprised at the amount of indignation expressed by people who are normally not very responsive to this kind of thing."

For all the fuss, one senses that in a few months we shall all, designers, laymen, pundits, bankers and forgers alike – revert to an indulgent blindness. The difficulties of ensuring security are enormous, and complex printing techniques (which must always be at least one jump ahead of the forgers) inevitably add to the designer's problems. But it is encouraging to hear that the suggestion that the CoID should advise on the design of future notes has been well received by the Bank. The first step is to straighten out those lines of communication.

MAURICE RICKARDS

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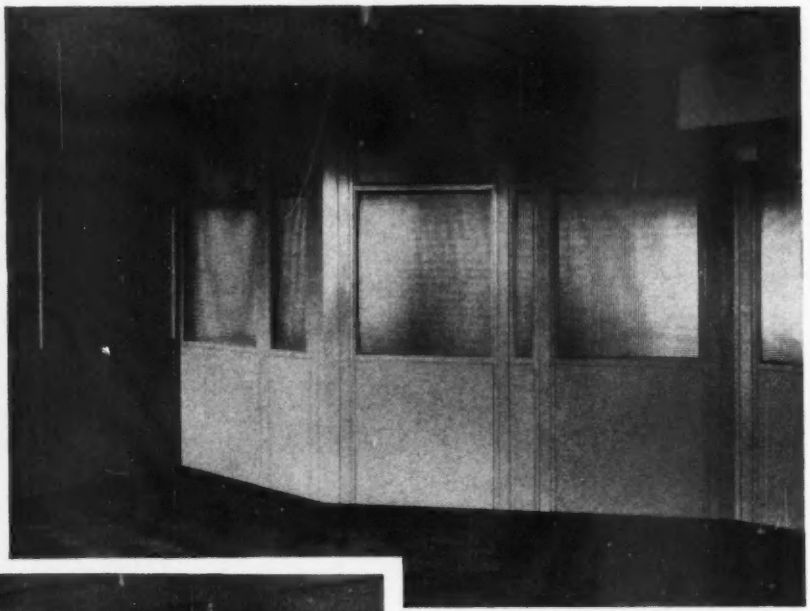
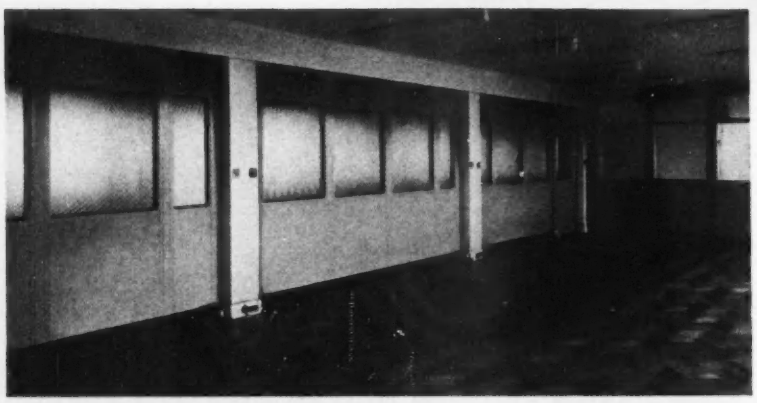
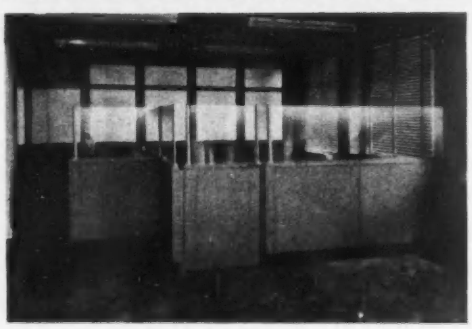




Photographs show an installation in the offices of Lloyd's Register of Shipping, Norfolk House, Croydon.



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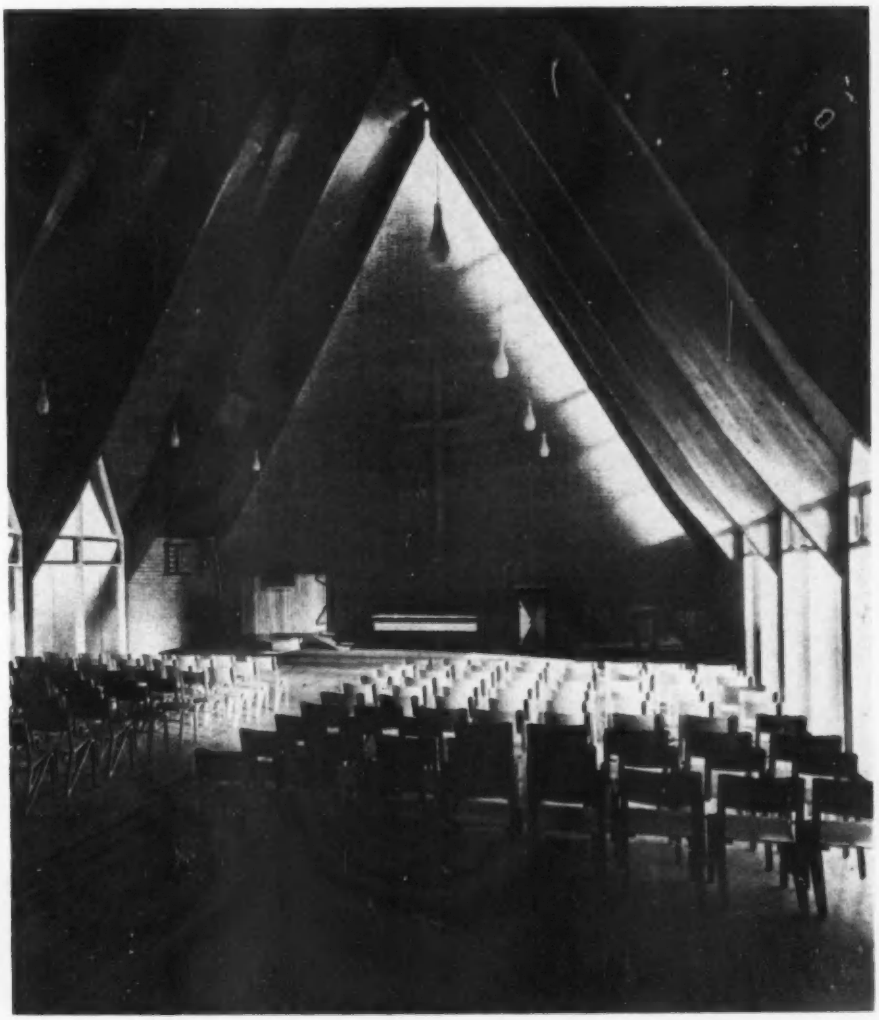
SF 25

Miscellany



Church in Ireland

The design of the new presbyterian church at Seymour Hill, Dunmurry, Co Antrim, is the result of a compromise between the architects, Munce & Kennedy of Belfast, and the commissioning body, the Committee for Church Extension of the Presbyterian Church in Ireland. This committee finances and administers most new church buildings in the area and provides the initial brief to the architects. Its approval must be sought during every stage of design development.

The first scheme submitted by the architects incorporated a parabolic shell roof, but it was rejected because of its "advanced nature", and the architects were asked to design a church with a pitched roof and brick walls, BELOW, at a cost not exceeding £17,500. The final design, viewed with suspicion at first, was accepted, both by the committee and by the minister and his congregation.

The furnishings and main items of the sanctuary and vestry were designed by the architects, and made by R. H. Knox of Belfast; the stacking chairs in the choir room and nave were imported from Czechoslovakia.

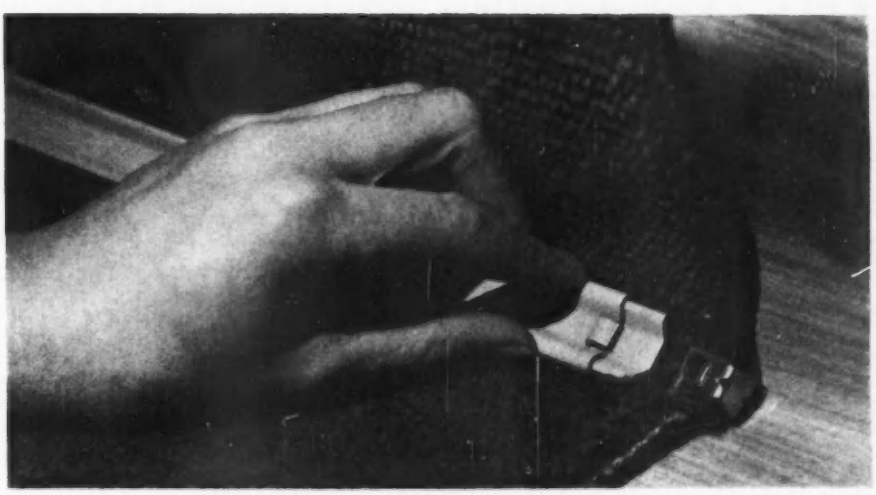
Laminated timber 'A' frames in Douglas fir set the tone for the nave and sanctuary, and timber and brick have been exploited to create a simple unobstructed interior, ABOVE.

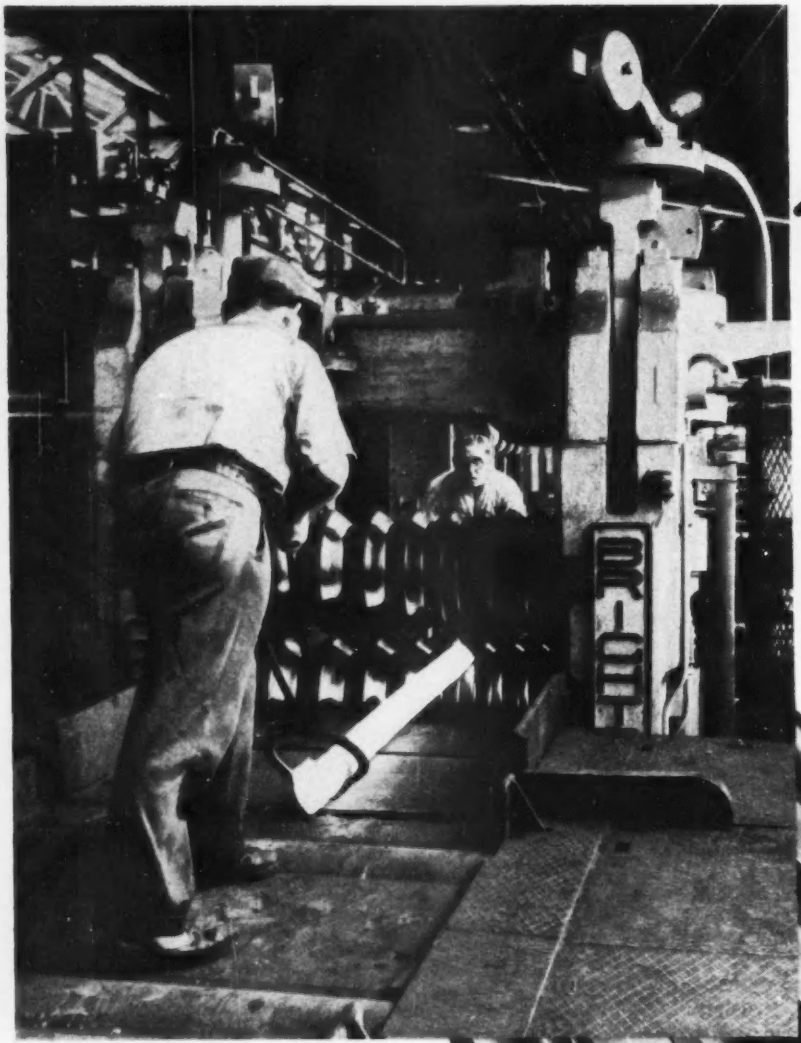
The pulpit, communion table, reading desk and font are in waxed oak and mahogany with black metal rails and supports. The choir at the rear of the church is accommodated in a two-tier demountable platform with a removable front rail of waxed parana pine and afrormosia slats. The architect in charge was A. D. Bell and the main contractor was D. R. Martin & Son Ltd.

Rigid stair rod

The Mono Curtain Rail Co Ltd has recently introduced a stair rod that is both ingenious and efficient, and should help to prevent falls due to loose stair carpeting. Each fitment consists of two brackets, two sliding components and the connecting rod. The brackets are screwed to the stairs under the edge of the carpet; the slides slip on to the rods and then clip into the brackets, so that the rod is firmly and rigidly fixed into position, and the brackets are concealed.

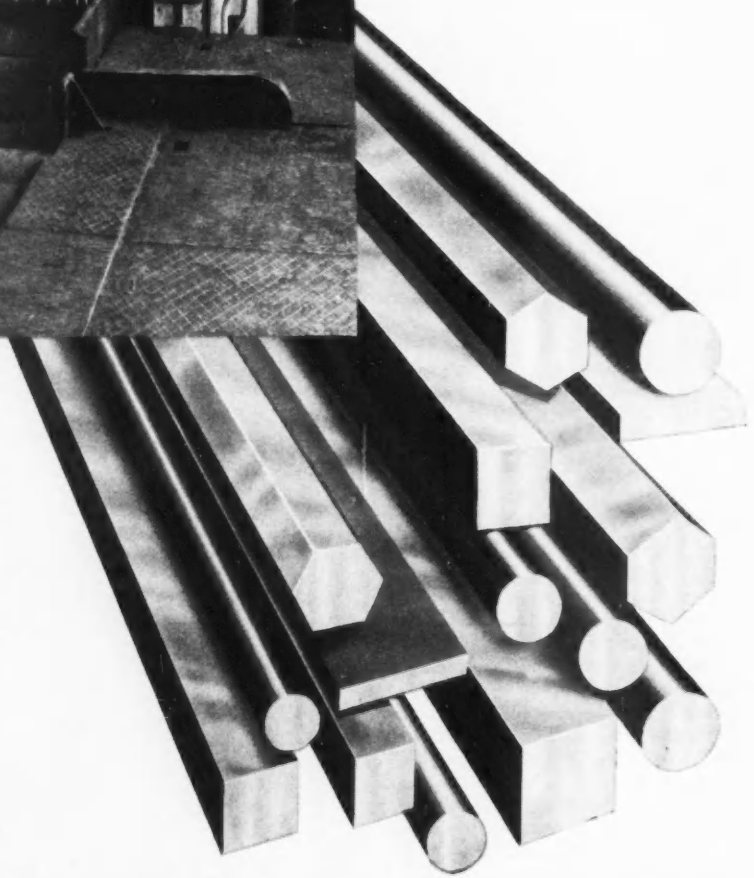
These *Pleasure* stair rods were designed by C. S. McDonald; they are made from plastics coated steel and are available in grey, white and brown; the brackets are electroplated in various colours. The fitments are designed to fit 18-, 22½-, 27- or 36-inch carpets. Prices range from £1 16s per dozen (width 18 inches) to £2 11s (width 36 inches).





"Staybrite"

STAINLESS STEEL BARS



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NEWS

PEOPLE

Student standards

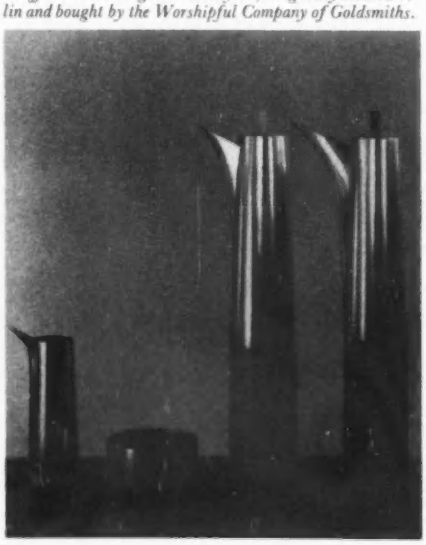
Any student who has three consecutive works purchased by the Worshipful Company of Goldsmiths for its permanent collection, and a commission from the Goldsmiths to design a presentation centre piece for the Royal Society, must be more than usually talented. When, in the same year, he wins first awards in the Furniture Makers' Guild mace competition, the Aluminium Development Association street lighting column competition (DESIGN 132/65) and a commendation in the Ascot Gold Cup competition (see page 69) he must be something of a phenomenon. But then, Stuart Devlin, 28, is no ordinary student.

Mr Devlin is the first official Australian to study at the Royal College of Art, London; he is now at

Stuart Devlin

the end of a two year course in the Schools of Silversmithing and Industrial Design (Engineering). He had previously taught as a qualified art teacher in Australian colleges for eight years, and had been head of the junior art department of a technical college for a year before coming to England on three simultaneous scholarships. Curiously enough, when Mr Devlin began his career with an Intermediate Technical Certificate, art was his weakest subject, while maths, chemistry and physics (to mention four out of nine passes) were at first class honours level. However, he chose art teaching as a career and qualified at the end of a three-year industrial art teaching course.

A coffee set in sterling silver and nylon, designed by Stuart Devlin and bought by the Worshipful Company of Goldsmiths.



This was followed by two years' industrial experience as a craftsman in an ecclesiastical silversmithing firm. Industrial experience is a requirement for the Trained Technical Instructors' Certificate in Australia, and having secured this at the age of 19, Mr Devlin took up a post in a teachers' training college. Shortly afterwards he was sent to a senior technical school in the country, and spent "five frustrating years" teaching silversmithing, pottery, painting, sculpture, dress design, millinery and industrial design at intermediate level.

However, this frustration was a blessing in disguise, because when he returned to teach at the training college he was inspired to work so furiously that he earned yet another diploma, the Royal Melbourne Technical College Diploma of Art, in only one year (instead of three), and with the highest marks ever recorded. This success won him the three simultaneous scholarships for travel to England, and took him away from the headship of a junior art department which he had meanwhile obtained.

From the very beginning he displayed a talent for refining basic shapes to the point when they almost, but not quite, become caricatures of themselves. He has become a master of precision finish. He feels that the opportunities which he has had during his studies at the Royal College of Art for working in complete freedom and for mingling with students, artists and craftsmen of greater maturity than he had met in any numbers at home, have enabled him to work out a creative surge to an extent which has exceeded his greatest expectations.

Now that he has done so, he feels he wants in turn to contribute something to the development of university level art education by conducting research into the extent to which a creative attitude can be developed by new methods of training. Indeed, he has recently been awarded a *Harkness* fellowship which will enable him to study for two years in an American university for this purpose, and at the same time he wants to continue to design in this new environment. He possesses the intellectual equipment and the artistic stature to do this difficult and controversial job properly. There will be many people in Britain who will be watching eagerly for his thesis. At the same time both Britain and Australia will have been starved of the products of a rare talent if he waits too long before adding to his, as yet, rather brief catalogue of works. L. BRUCE ARCHER

Island inspiration

Althea McNish, 28, is another remarkably successful young designer from the Commonwealth. She left Port of Spain, Trinidad, for London nine years ago to study at the London School of Printing and Graphic Arts, and then won a scholarship to the School of Textile Design, Royal College of Art.

Her talent showed itself while she was still at school, and became even more obvious when she began to design textiles. In fact, when, after taking the Royal College's diploma in design, she set forth on the generally stony path of the young freelance designer, she found it unexpectedly easy. Important textile firms, such as Liberty's, Ascher, Hull Traders', Heal's, etc, took a look at her designs, liked them, bought them, and asked for more after it was found that they appealed to a wide public.

That appeal is easy to understand. Out of her intense longing for the sun of her native island, Miss McNish has created a world of brilliant colours inspired by its flora and fauna, treated with a freedom, a sense of tonal values and a harmony that together form a style astonishingly assured in one so young.

The controlled boldness in her use of pigments and in her interpretation of shapes and forms of tropical nature is probably due to Miss McNish's early training. She started dabbling with paint as far back as she can remember, but she also submitted herself to an exact schooling in draughtsmanship (she became a cartographer in the Trinidad Department of Agriculture before she came to this country).

Since those early days, her art has become steadily

Sally Adams

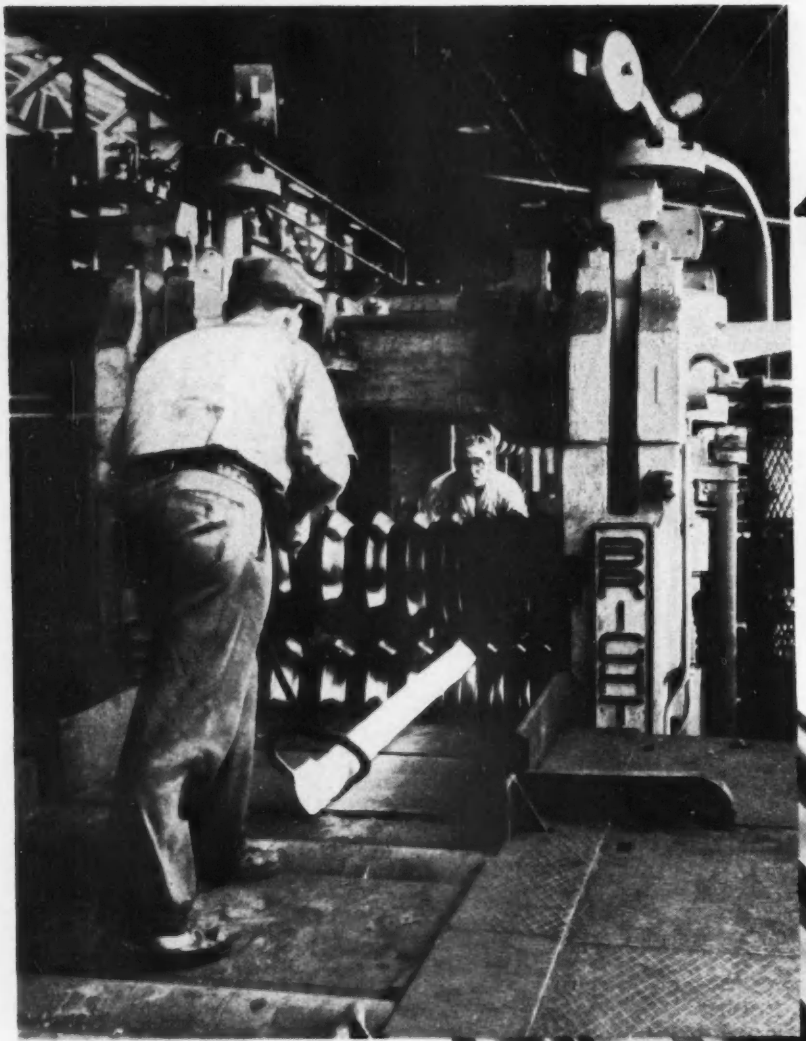
Althea McNish in The Design Centre with one of her wallpapers for WPM Ltd.

richer in texture and intensity. She has studied, and has been influenced by, the French post-impressionists especially Van Gogh, Gauguin and Matisse, finding in them a spiritual affinity to her own vivid outlook. Nearer her own home, as an associate member of the American Anthropological Society, she studied Mexican art – about which she wrote a thesis for her diploma – and she admired greatly the art of Diego Rivera.

She has blended these various influences in a style that is definitely and recognisably her own. It is based on the exuberant, lush nature of the Caribbeans – interpreted by an artist who has found in the grey, drab London scene an added incentive to recall in her work the more colourful world of her formative years.

Her style is applied to an increasingly varied multitude of purposes. To furnishings and scarves has been added wallpaper, such as that in the WPM *Palladio* range. These have been followed by, or intermingled with, designs for book jackets (for Longman's), fabrics (for London Transport), murals (such as those she has just completed for the Trinidad Teachers' College), and panels (on which she is

continued on page 67



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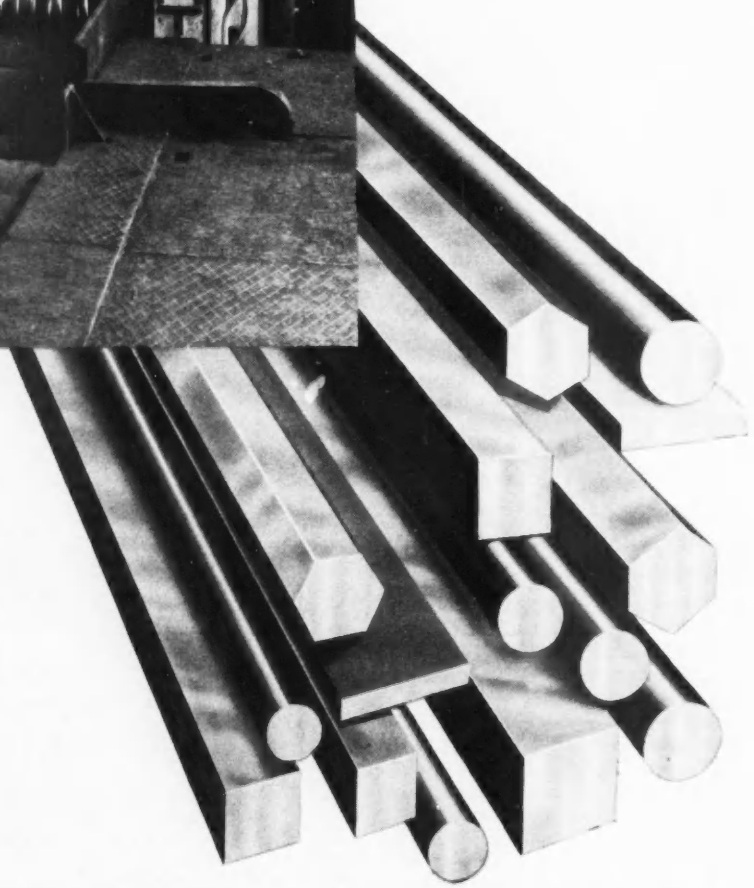

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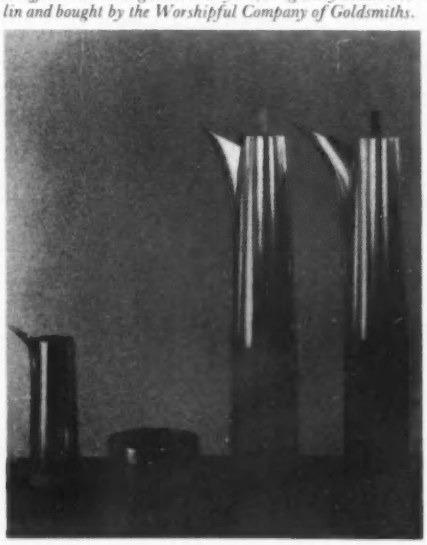
Mr Devlin is the first official Australian to study at the Royal College of Art, London; he is now at

Stuart Devlin

the end of a two year course in the Schools of Silversmithing and Industrial Design (Engineering). He had previously taught as a qualified art teacher in Australian colleges for eight years, and had been head of the junior art department of a technical college for a year before coming to England on three simultaneous scholarships. Curiously enough, when Mr Devlin began his career with an Intermediate Technical Certificate, art was his weakest subject, while maths, chemistry and physics (to mention four out of nine passes) were at first class honours level. However, he chose art teaching as a career and qualified at the end of a three-year industrial art teaching course.

A coffee set in sterling silver and nylon, designed by Stuart Devlin and bought by the Worshipful Company of Goldsmiths.



This was followed by two years' industrial experience as a craftsman in an ecclesiastical silversmithing firm. Industrial experience is a requirement for the Trained Technical Instructors' Certificate in Australia, and having secured this at the age of 19, Mr Devlin took up a post in a teachers' training college. Shortly afterwards he was sent to a senior technical school in the country, and spent "five frustrating years" teaching silversmithing, pottery, painting, sculpture, dress design, millinery and industrial design at intermediate level.

However, this frustration was a blessing in disguise, because when he returned to teach at the training college he was inspired to work so furiously that he earned yet another diploma, the Royal Melbourne Technical College Diploma of Art, in only one year (instead of three), and with the highest marks ever recorded. This success won him the three simultaneous scholarships for travel to England, and took him away from the headship of a junior art department which he had meanwhile obtained.

From the very beginning he displayed a talent for refining basic shapes to the point when they almost, but not quite, become caricatures of themselves. He has become a master of precision finish. He feels that the opportunities which he has had during his studies at the Royal College of Art for working in complete freedom and for mingling with students, artists and craftsmen of greater maturity than he had met in any numbers at home, have enabled him to work out a creative surge to an extent which has exceeded his greatest expectations.

Now that he has done so, he feels he wants in turn to contribute something to the development of university level art education by conducting research into the extent to which a creative attitude can be developed by new methods of training. Indeed, he has recently been awarded a *Harkness* fellowship which will enable him to study for two years in an American university for this purpose, and at the same time he wants to continue to design in this new environment. He possesses the intellectual equipment and the artistic stature to do this difficult and controversial job properly. There will be many people in Britain who will be watching eagerly for his thesis. At the same time both Britain and Australia will have been starved of the products of a rare talent if he waits too long before adding to his, as yet, rather brief catalogue of works. L. BRUCE ARCHER

Island inspiration

Althea McNish, 28, is another remarkably successful young designer from the Commonwealth. She left Port of Spain, Trinidad, for London nine years ago to study at the London School of Printing and Graphic Arts, and then won a scholarship to the School of Textile Design, Royal College of Art.

Her talent showed itself while she was still at school, and became even more obvious when she began to design textiles. In fact, when, after taking the Royal College's diploma in design, she set forth on the generally stony path of the young freelance designer, she found it unexpectedly easy. Important textile firms, such as Liberty's, Ascher, Hull Traders', Heal's, etc, took a look at her designs, liked them, bought them, and asked for more after it was found that they appealed to a wide public.

That appeal is easy to understand. Out of her intense longing for the sun of her native island, Miss McNish has created a world of brilliant colours inspired by its flora and fauna, treated with a freedom, a sense of tonal values and a harmony that together form a style astonishingly assured in one so young.

The controlled boldness in her use of pigments and in her interpretation of shapes and forms of tropical nature is probably due to Miss McNish's early training. She started dabbling with paint as far back as she can remember, but she also submitted herself to an exact schooling in draughtsmanship (she became a cartographer in the Trinidad Department of Agriculture before she came to this country).

Since those early days, her art has become steadily

Sally Adams

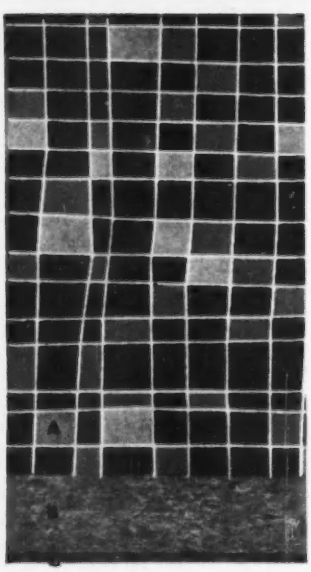
Althea McNish in The Design Centre with one of her wallpapers for WPM Ltd.

richer in texture and intensity. She has studied, and has been influenced by, the French post-impressionists especially Van Gogh, Gauguin and Matisse, finding in them a spiritual affinity to her own vivid outlook. Nearer her own home, as an associate member of the American Anthropological Society, she studied Mexican art – about which she wrote a thesis for her diploma – and she admired greatly the art of Diego Rivera.

She has blended these various influences in a style that is definitely and recognisably her own. It is based on the exuberant, lush nature of the Caribbeans – interpreted by an artist who has found in the grey, drab London scene an added incentive to recall in her work the more colourful world of her formative years.

Her style is applied to an increasingly varied multitude of purposes. To furnishings and scarves has been added wallpaper, such as that in the WPM *Palladio* range. These have been followed by, or intermingled with, designs for book jackets (for Longman's), fabrics (for London Transport), murals (such as those she has just completed for the Trinidad Teachers' College), and panels (on which she is

continued on page 67



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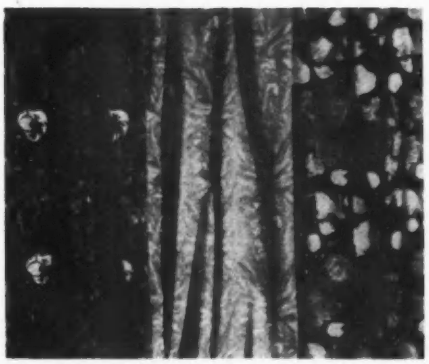

Three designs by Althea McNish for Liberty & Co Ltd.

now working for the SS *Oriana*). Her designs have received increasing recognition abroad; French and Swiss manufacturers have bought and used them, and they have been reproduced in leading Continental design magazines.

Still on the right side of 30, Althea McNish has obviously a brilliant career in front of her – and brilliant is the operative word. RENE ELVIN

CoID Scottish committee

Three new members have been appointed to the CoID Scottish Committee by the President of the Board of Trade. They are R. L. Hunter, a director of Allied Iron Founders Ltd, and managing director of that company's northern group; John S. McEwan, director of education for the County of Lanark; and Sir Alastair Young, Bt, chairman, James Templeton & Co Ltd.

Four members have been re-appointed: P. B. H. Brown, vice-chairman and managing director of L. Sterne & Co Ltd; T. J. Cavanagh, chairman, Barry & Staines Linoleum Ltd; T. Coughtrie, chairman and managing director, The Belmos Co Ltd; and The Lady Sempill, artist and designer.

Two members have retired: D. P. Bliss, director, the Glasgow School of Art; and R. R. Scott Hay, chairman and managing director, Reid & Taylor Ltd. T. R. H. Godden succeeds I. A. H. More as Scottish Home Department assessor with the Scottish Committee.

Editorial assistant

Archie McNab has recently joined DESIGN as an editorial assistant. He studied architecture and town planning at the Edinburgh College of Art, and has previously worked with the Basildon Development Corporation.

Public relations appointment

Michael Stokes, of the Bristol Building Centre, has been appointed public relations officer to the Bristol office of the Design and Industries Association.

New president for Building Centre

Basil Spence has been elected president of The Building Centre, 26 Store Street, wc1, in the place of the late Sir Giles Gilbert Scott.

Association chairman

Jack Kape, principal of the Technical College for the Furnishing Trades, Shoreditch, has been elected chairman of the Association of Principals of LCC Technical Colleges and Schools of Art.

OBITUARY

Adriano Olivetti

Adriano Olivetti, president of the Olivetti Company of Ivrea, who died recently, was internationally known as one of the initiators and sponsors of modern Italian architecture, graphic art, town planning, and industrial design. His cultural *avant gardisme* is almost a legend. In 1936 he commissioned two architects, Figini and Pollini, to design a new factory in Ivrea. This was one of the few great achievements of Italian architecture prior to the second World War. In 1940 he initiated the co-operation between technicians and industrial designers that characterises Olivetti products. Needless to say Olivetti typewriters were the first and most famous examples of Italian industrial design, one could almost say its emblem.

The Olivetti style runs through the modern Ivrea factories, the Milan office building, and the graphic presentation of the firm's products (since 1931 artists like Pintori, Boggeri, Albini, Carboni have worked in the Olivetti publicity offices); it runs through the design of the products, the shops and the agencies designed by well known architects. An exhibition at the Museum of Modern Art, New York in 1952, surveyed the extent of Olivetti's work at that time. This included the Ivrea factories, the residential quarters for employees by Nizzoli and Oliveri, the New York showroom by Belgiojoso, Peressutti and

Adriano Olivetti

Rogers, the Milan office building by Fiocchi, Bernasconi and Nizzoli, the holiday camp at Marina di Massa by Fiocchi and Cascio. There was product design by Nizzoli, the posters and publicity material that gave Italy its first taste of modern graphic design. And finally, there were the books and essays written by Adriano Olivetti himself.

Many other works have been added to these, including the Pozzuoli factory, by Cosenza, and the factories under construction in Argentina and Brazil designed by Zanuso.

All this has been realized by Olivetti. He was one of the few pioneers in the history of Italian industry and he embodied the modern figure of enlightened industrialist. His firm brought work to southern Italy, and increased the export of Italian products.

In the field of culture we have lost a powerful patron and a great *maecenas* (he founded the Olivetti awards for architecture and town planning, and established such important magazines as *Urbanistica*, *Zodiac*, *Sele-Arte*).

In 1955 Adriano Olivetti was awarded the *National Compasso d'Oro* for the aesthetic aspects of the social work he has performed.

LETIZIA FRAILICH PONTI

CONFERENCE

Comfort by degrees

The aim of the Furniture Development Council's recent one-day conference was to stimulate the industry's interest in *The Scientific Approach to Comfort* (see page 25). And this it did by inviting several speakers unconnected with the furniture industry to put forward their ideas on comfort. As Jack Pritchard, director, FDC, said in his introduction: "More and more industries are finding that scientific principles normally applicable to one industry have important repercussions on another, and the scientific approach to any industrial problem is worth trying".

Dr W. F. Floyd, who spoke first, discussed some of the work which has been carried out on office furniture. With such furniture it is possible to agree general criteria of comfort on a basis of anthropometric studies, muscle activity, etc. But applying the same principles to easy chairs was far from straightforward. While, for example, a low seat height avoided undue pressure beneath the thigh, an elderly person might find difficulty in getting out of a low chair. Again, an easy chair designed to hold the sitter in an anatomically correct position would not necessarily prove to be comfortable over a long period; continual changes in posture are essential to prolonged comfort and thus a chair should be designed to accommodate a variety of postures (see *Fitting for Action 2*, page 52).

Both Dr R. G. Hopkinson and F. A. Chrenko described their general studies in assessing comfort, the former being concerned with light and lighting and the latter with thermal comfort. Dr Hopkinson told the conference it had been found that it was best for an observer to assess a degree of visual *discomfort* using such terms as 'just acceptable', 'just comfortable' and 'just intolerable'. Could not the furniture industry carry out research with various types of chairs which could be adjusted during experiments so that data could be collated and criteria of comfort agreed upon? Mr Chrenko thought that, in the past, inefficient heating in the home may have led the chair manufacturer to produce high backed chairs. If heating systems were better the designer could create chairs of improved appearance as he could "get rid of some of the lagging at the back of the chair".

The poor design of many household articles, occasioned very often by submission to manufacturing convenience and insufficient testing of designs, was discussed by Professor A. T. Welford. "There is not enough work done on whether a design is usable", he said. He agreed with the previous speakers that it was easier to define *discomfort* than *comfort*.

However, a brains trust in which four experts,

continued on page 69

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Dr Floyd, Professor Welford, Dr O. G. Edholm and M. J. Merrick, head of the FDC research department, were asked to comment on six easy chairs proved to be the most controversial item on the agenda. After the panel had exchanged a few cryptic comments about seat height, depth of seat and positioning of arm rests, there was a strong attack from one irate member of the audience who maintained that the scientists had "omitted the most important factor of all – that of cost. The furniture industry makes chairs to a cost and the other questions of comfort and appearance revolve around that". He complained that none of the speakers was in the furniture industry, but Professor Welford had previously said this might be an advantage "as the nearest does not always see the problem clearest". M.J.B.

EXHIBITIONS

Vending machines

The British vending machine industry seems to be growing up. The difference between the recent *International Automatic Vending Exhibition* and the first of its kind a year ago was mainly in the greater maturity of the exhibitors rather than in any vast improvement in the quality of the designs shown. Many large catering firms and orthodox engineering firms are taking over in place of the mushrooming import-export operators who were the first to see the promise in this fast developing field. The machines themselves, however, still tend to follow the amusement arcade style.

Here and there the first fruits of greater professionalism in design and presentation are beginning to show, mainly in refinements to imported designs. One notable development that is entirely British is a new machine which will accept any variety of coins, deliver any one or more of 24 different products (some refrigerated, some not), and return the change. This is a sophisticated idea which is, as yet, rather crudely presented, but points the way to future developments. For the rest, it was much the same exhibition as the year before, but tended by sleeker salesmen. L. BRUCE ARCHER

British design in Lagos

Part of an exhibition of British consumer goods organised by the CoID and the United Africa Co, and held in a department store in Lagos recently. This display, together with a similar one in Accra, was visited by over 30,000 people.

Royal visit in Scotland

HRH The Prince Philip, Duke of Edinburgh, visited The Scottish Design Centre in Glasgow recently – the first occasion on which a member of the Royal family has visited the Centre. He was welcomed by Sir Charles Connell, chairman of the CoID Scottish Committee.

During his tour of the Centre, RIGHT, the Duke paid close attention to the exhibits on show there and was particularly pleased to see the *Packaway* refrigerator which, last year, gained for its designer the Duke of Edinburgh's Prize for Elegant Design (DESIGN 126/31-33). The Duke also showed keen interest in the Scottish products grouped together as a special feature of the exhibition. During the course of his visit members of the Scottish Committee and senior staff were presented to His Royal Highness.

For the first time there is now a permanent exhibition of well designed products at The Scottish Design Centre; goods which have been selected for 'Design Index' are eligible for display there.

Graphics for persuasion

The publicity design group of the Society of Industrial Artists is organising an exhibition of publicity design which will be held in the De La Rue showrooms, 84 Regent Street, sw1, from May 25-June 14. The exhibition, *The Art of Persuasion*, will consist of work (all forms of graphic design, including posters, record sleeves, TV captions, trade marks, book jackets, etc) submitted by SIA members and selected by a panel of five, including Abram Games, Ashley Havinden and Hans Schleger.

Swedish textile display

An exhibition of modern Swedish textiles is on view at the Ceylon Tea Centre, Lower Regent Street, sw1, until May 7. Called *Swedish Textiles for Modern Living*, it includes work by 20 leading Swedish textile designers.

At home . . .

International Photo Fair, Olympia, May 29 – June 3.
International Machine Tool Exhibition, Olympia, June 25 – July 8.
International Stamp Exhibition, Royal Festival Hall, July 9 – 16.

. . . and abroad

International Trade Fair, Messina, August 1 – 16 (apply Ente Autonomo Fiera di Messina, Messina, Italy).
St Erik's Fair, Stockholm, August 31 – September 11 (Trade Fairs and Promotions Ltd, Drury House, Russell St, London, wc2).
International Autumn Fair, Frankfurt, August 28 – September 2 (Lep Transport Ltd, Sunlight Wharf, Upper Thames Street, London, EC4).
International Autumn Fair, Leipzig, September 4 – 11 (Leipzig Fair Agency in Great Britain, 39 St James's Place, London, sw1).
Italian Machine Tool Exhibition, Milan, September 29 – October 9 (Unione Costruttori Italiani Macchine Utensili, Via Palestro 22, Milan).

HRH The Duke of Edinburgh during his visit to the Scottish Design Centre; with him are Sir Charles Connell, chairman of the CoID Scottish Committee, and A. R. M. Forrest, acting chief executive. (*See* Royal visit in Scotland)

COMPETITIONS

Ascot race cups

The Worshipful Company of Goldsmiths recently organised a competition for Ascot race cup designs. There were three sections – for the *Gold Cup*, the *Royal Hunt Cup* and the *Queen's Vase*. R. A. Bray was

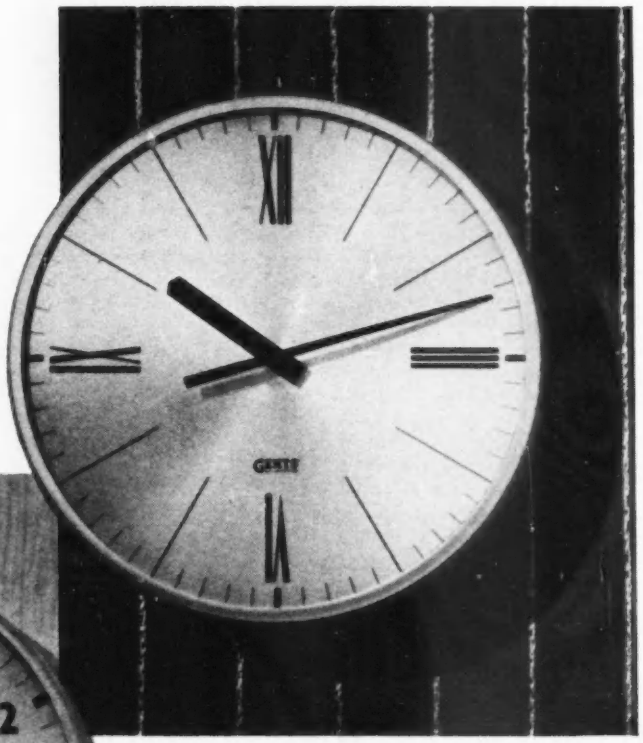
continued on page 71

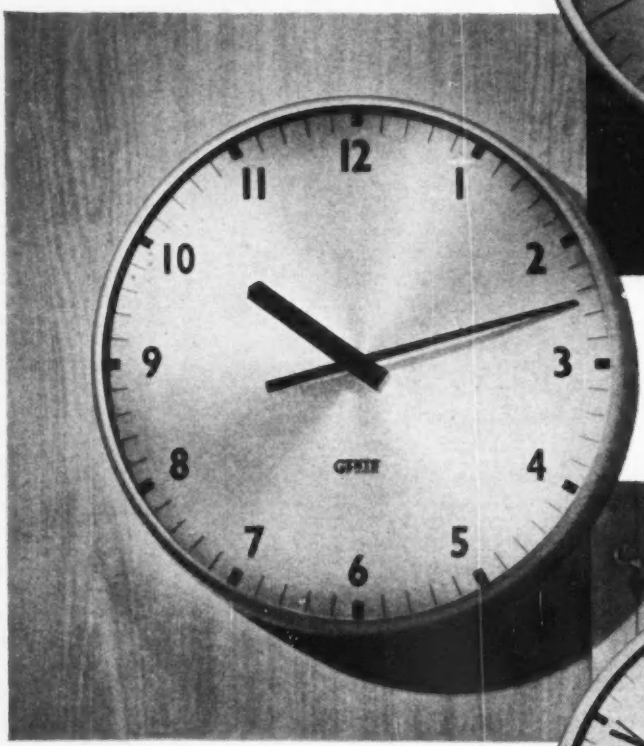
Maximum legibility and good taste are combined in the Gents wall clocks shown here.

Styled by a leading industrial designer they provide a choice of standard models which fit happily into present-day surroundings and décor.

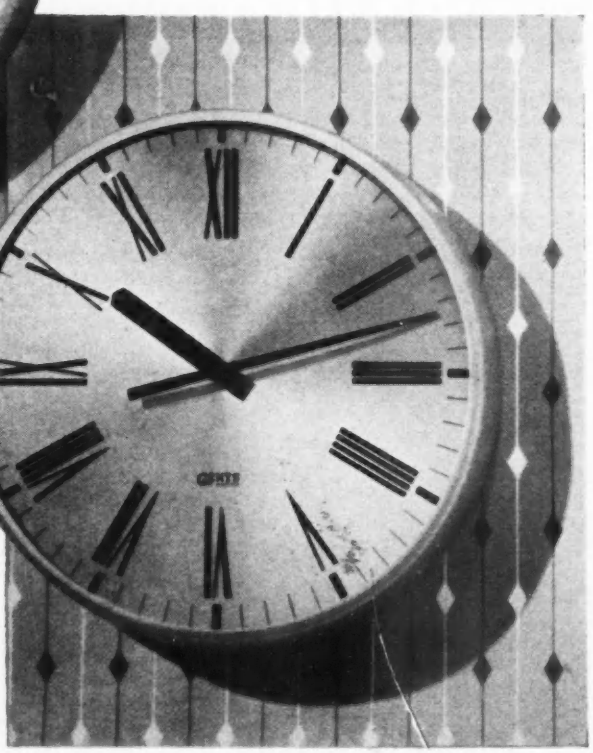
These and others in the extensive Gents range have been selected by the Council of Industrial Design for inclusion in Design Index.

All are available for operating either on A.C. Mains or as part of a Master Clock System.





In every way...Right!



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awarded first prize in the *Gold Cup* entry (Mr Bray is a student at the City of Canterbury School of Arts and Crafts); designs by Iden Claessen and Stuart Devlin (see page 65) were also commended.

The first prize in the *Royal Hunt Cup* section was awarded to Gerald Whiles, a student at the Royal College of Art; in the *Queen's Vase* section, however, the judges found no design which merited an award.

The judges report that although there was a large number of entries, the standard of the designs submitted was "disappointing". Their report continues: "Too many seemed to show a pre-occupation for ornament at the expense of underlying form, and only a few incorporated good, strong straightforward shapes".

Craftsmanship in metal

The Goldsmiths', Silversmiths' and Jewellers' Art Council of London has announced details of its *1960 Competition and Exhibition of Craftsmanship*. This is open to silversmiths, jewellers, engravers, modellers, etc, and there are sections for students and apprentices. The last date for the receipt of entries is November 1; full details of the competition are available from The Secretary, Goldsmiths', Silversmiths' and Jewellers' Art Council of London, Goldsmiths' Hall, Foster Lane, London, EC2.

MISCELLANEOUS

Techniques with glass

The discussion which followed a lecture on the *Art of Glass Engraving* given by Helen Munro at the Royal Society of Arts recently, served to show that little is known of the techniques and possibilities of this medium. The lecture was a lucid and direct talk on the problems and technique of copper wheel engraving by one of the foremost exponents of the art. The difficulties and qualities of young entrants in this field of design were also described, together with a survey of the historical background and other possible ways in which glass may be engraved.

Goblet designed in the Industrial Glass Department, School of Art, Kingston.

The primary query which followed the discussion related to the use of several methods of engraving upon one piece of glass. The illustration, LEFT, shows decorations produced by the destruction of the glass surface by a quick biting acid, diamond point stipple and controlled sandblasting. The elements of the design have been carefully placed to give the maximum effect when wine (with its refractive properties) or any other clear liquid is poured into the glass.

JOHN GAYLARD

Modernising the chemist's shop

Boots the Chemists recently announced details of an extensive modernisation programme. Existing premises will be completely rebuilt or refitted; the new shops according to the management, will be spacious, colourful and well lit. There will, however, be no attempt to standardise the shops or give them a house style; each store will be individually designed to meet the requirements of the area it will serve.

Welding advice

The British Welding Research Association has recently launched a design advisory service for its members. This will advise on problems such as layout (to ensure that welds are placed in the most advantageous position) and the size, type and location of welds to carry the necessary loads. Fatigue tests on models and prototypes can be made, as well as stress analysis of structures on site. The head of the new service is Tibor Haas, Design Advisory Service, British Welding Research Association, Abington Hall, Abington, Cambridge.

Foyer renovated

The entrance foyer of the Ceylon Tea Centre, Lower Regent St, SW1, has recently been redesigned by Professor Misha Black, Derek D'Arcy and Robert Perritt of Design Research Unit. New features include the direction notice, left, *and the bead screen at mezzanine level which partially hides the foyer of the exhibition hall.*

LETTERS

Anthropometrics for the designer

SIR: I would like to make some comments on an article by Brigid O'Donovan on *Measurements for Designers* (DESIGN 128/48-50). In her first paragraph she writes: "Sets of human measurements are on the whole not much use to the designer; they require too much interpretation in the light of physiological and statistical knowledge. It is more satisfactory to present measurements in the form of equipment dimensions for designers to work to".

From this it would seem that in her view 'a little knowledge is a dangerous thing', and that furniture designers, for example, cannot be trusted to use such technical information or have sufficient perspicacity to call in a consultant at the appropriate time.

I cannot agree that the designer should hand over the problem to the anthropometric expert, but I do agree that he should be consulted at the earliest possible moment. While a little knowledge may be dangerous, a lack of knowledge is even more dangerous, and it is up to the scientist, including the anthropometric expert, to provide the designer with basic information in a form that is convenient for the designer to apply.

There is a very great need for designers to understand, and to have available, more information about the anthropometric distribution of the population and to realise the importance, when considering a particular section of the population, of taking special precautions to see that every sample of the population is statistically correct.

Here at the Furniture Development Council, we are of the opinion that as much information should be published as possible, so that the designer can be free from obscurities (the FDC library does, in fact, contain quite a lot of information about sitting). We certainly agree however that the designer should call on the professional scientist to the fullest possible extent in much the same way, for example, that the architect calls on the structural engineer. But no architect worth his salt will design a building when he does not understand the implications of structural engineering.

J. C. PRITCHARD
Director and Secretary
The Furniture Development Council
11 Adelphi Terrace
London WC2

Brigid O'Donovan replies: "I do not think that J. C. Pritchard's views are so very different from mine. I certainly would not *withhold* available anthropometric information from designers. I do not think, however, that at present designers know how to use this information; nor do I think that there are enough anthropometrists to go round as everyday advisors to individual firms. At the moment, the best solution is for the few available anthropometrists to work together to produce dimensions for furniture in gen-

continued on page 73

design for prosperity

Sankey-Royal chairs and tables are made to attract an elegant, comfort loving clientele. The chairs, in square-tube for grace and strength, with softly contoured upholstery in stain-free fabrics, offer unlimited choice of colour scheme. Flared rear legs to prevent damage to walls are among the many invaluable design features. Matching tables with Formica tops in any shape you wish—three interchangeable leg heights—for lounge, bar, restaurant and indeed any room. The choice is wide. Prices are surprisingly low. Please write for illustrated brochure.

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eral use especially the more complicated combinations such as the chair-with-desk, which has already been covered by the British Standards Institution.

"This situation could be altered once the subject has been reduced to text-book form, and is taught in sufficient depth in training colleges as part of a wider course in ergonomics. This is just beginning to happen. The elements are not difficult to grasp, but like the multiplication table, they do have to be studied. There is no reason why elementary ergonomics, including elementary statistics, should not one day be part of the equipment of most product designers. They may then be able to convert anthropometric information into equipment design. But at present they would be better served by equipment dimensions, with enough anthropometric information to enable them to see the point of the dimensions.

"Of course, however well informed and self reliant designers become, there will still remain the all important question of standardisation. Where standards are required, as they increasingly are, anthropometrists should come in at a very early stage."

Typography problems

SIR: I would like to comment on a statement in DESIGN 133/43: "The choice of an Antique letter form . . . may perhaps be regarded as a compliment to DESIGN's own typography . . ."

Surely the basis of all good typography and the best advertising is to use good letter forms in an appropriate manner? I consider that the word 'design' in Antique letter forms as used on the cover is very bad – it is ugly, overweight and distorted lettering. Surely it is about time this cover and symbol lettering was redesigned to be in keeping with the principles of good design the CoID applies in judging any manufactured goods?

It seems to me, any insensitive manufacturer, shopkeeper or consumer reading that issue of DESIGN will be completely misled into thinking that these ugly and crude letter forms must be good. Then unfortunately we will see more of this poor lettering in trade literature, on vans and shop fronts.

Is it not time the CoID gave a lead on the use of good letter forms in advertising, on shop facias and vans, and in all civic places? The average standard is low enough, and it would be good to see the CoID give the problem some worthwhile attention.

DAVID DEWEY
Digswell House
Welwyn Garden City
Herts

The art editor replies: "Naturally, I cannot agree with the opinion that the letter forms of Antique 6, our heading type, are ugly and crude: I think they are robust and well formed, and very suitable for DESIGN. A display face which has any distinctive qualities at all is almost certain to arouse positive feelings of like, or sometimes dislike, as against a text face, which should be self effacing and capable of being judged on objective grounds. Antique 6 has a particularly British flavour (our early nineteenth century Egyptian designs have never been bettered) which is useful in a magazine with an international readership.

"An enlarged version of this typeface is used on the facia of The Design Centre in Haymarket, where it adapts well to the purpose. In this respect, I feel the CoID *is* giving a lead on the use of good letter forms."

The new type face

SIR: I am delighted to see you can now afford a square back and thread sewn sections, but I cannot but regret your change from Plantin to Baskerville which you describe as "a crisp design more in key with the subject matter of the magazine" (DESIGN 133/69). On glossy art paper Plantin is generally regarded as more legible. The Baskerville (adapted from the famous eighteenth century type) was designed for book printing where the ink spreads slightly on the softer paper. Sorry to seem old fashioned, but I would hold that the more legible typeface was the one most in key with your magazine.

NOEL CARRINGTON
Long Acre Farm
Lambourn
Berks

SIR: May I be allowed to make an observation on the change of text type in DESIGN? Firstly, Baskerville (the type the magazine is now using) being a transitional typeface in the evolution from old style to modern, has greater contrast between the thick and thin strokes than Plantin, which when printed on art paper slightly dazzles the eyes.

Secondly, since Baskerville is a typeface of small apparent body height in comparison with Plantin of similar overall depth, it gives the optical impression of using a smaller typeface, resulting in loss of legibility. These two factors combine together to make reading your magazine more difficult if not to cause actual discomfort to the eyes.

JOHN CLARE
29 Tanfield Avenue
Neasden
London NW2

The art editor replies: "There is little evidence to support the theory that, because its thicks and thins are more contrasted than Plantin, Baskerville is unsuitable for art paper.

"When considering the comparative readability of Plantin and Baskerville, we consulted the Applied Psychology Research Unit of the Medical Research Council at Cambridge. The reply was that on the evidence of similar tests the unit had made in the past, there would be so little difference in readability that a test would be unlikely to establish any superiority in this respect, unless a large number of people were asked to take part in an experiment."

British fortnight in Switzerland

The illustration shows part of The Design Centre display which was staged in the Zürich department store Grands Magasins Jelmoli *recently. The display consisted of about 70 products selected from 'Design Index'. During the course of the exhibition Britain's share in the percentage of sales of imported goods rose by 40 per cent.*

Exhibitions: discipline or chaos?

SIR: F. Keil's provoking and interesting letter on exhibition technique (DESIGN 134/75) raises once again the difference between design which is to appeal to so called normal human susceptibilities and design in the modern idiom. The latter is so much influenced by the work of Mies van der Rohe and his dictum "Less is more" that the resulting severity of style is continually being labelled inhuman by those who have not absorbed its visual language.

It is perhaps a conflict of modern architectural design that it hopes to achieve human emotional responses with industrial techniques and materials.

The three-dimensional projection of advertising and products demands the techniques of the typographer, graphic and architectural designer. It is possible that a designer working within a theatrical idiom could produce the effects asked for by Mr Keil. However, I hope we shall be spared the theatrical or whimsical showmanship which could be im-

continued on page 75

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posed on an architecturally designed structure. For it seems to me that this is only likely to add to the chaos of the 'contemporary' jungle that is to be seen at many of our trade exhibitions.

The new design concept which Mr Keil is to support may not be faced with these conflicts, but will it achieve the design standards of the exhibitions illustrated in the same issue of DESIGN in which his letter appeared?

GEORGE COLLETT
Collett Associates
Highgate
London N6

BOOKS

Exhibition and display

James Gardner and Caroline Heller, B. T. Batsford Ltd, £4 4s

The first brief glance at this book reveals its distinguishing characteristics, and rich promise of helpful information and guidance.

This promise is substantially fulfilled by more detailed study, and James Gardner's introduction, which is brief and to the point, immediately sets the tone in its opening paragraph: "When one is in the business" he writes, "it is easy to think and talk about exhibition design as though its temporary structures and display arrangements had an abstract importance of their own, but an exhibition does not in fact exist until it is crowded with people, and what really matters is *how these people react to what they see*". The italics are mine. I am 'in the business' and I would like to be identified with this pertinent observation of first principles. So simple. So obvious perhaps. And yet how often overlooked?

Mr Gardner continues: "There are enormous possibilities ahead, not so much in the layouts, structures and display arrangements as in the application of sound, animation and controlled lighting". These indeed are the ingredients which differentiate a static and a dynamic exhibition. They determine, more than any other feature, the vitality, the pulse rate, of almost every public performance.

In support of these contentions Mr Gardner and Caroline Heller have filled their book not only with a stimulating collection of photographs, but with useful chapters on a host of practical aspects.

The volume is divided into two main parts, one dealing with 'principles and practice' and the other with notes on 'procedure'. The first section deals with such important matters as the technique of selling, circulation problems, lighting in both its functional and decorative aspects indoors and out, the use of words, wind and water, special effects, theatrical techniques and the hundreds of theoretical considerations which the creative mind has to take into account. The latter part of the book discusses and illustrates the application (or non-application) of the principles already outlined and debated.

The book is attractively and sensibly laid out, containing over 350 photographs in black and white, representing an international coverage and supported by a number of line drawings and plans. Had there been just one or two colour plates, one might well have wished for more. The fact that there are none seems to absolve the book from a need for any.

This is a really valuable addition to the literature on exhibition and display design by one of its most distinguished and outstanding exponents. It is just what is needed to help bring about a fresh attitude to this fascinating field of showmanship. It is a book to treasure, but above all it is a book to *use*. F. KEIL

Graphis packaging

Editor Walter Herdeg, Sylvan Press Ltd, £5 5s

Anyone who has ever tackled a similar job will be sympathetically aware of the vast amount of hard work that must have gone into the preparation of this book: it includes 1,022 illustrations of packs from 11,000 submitted. And anyone who knows *Graphis* will expect to find this material presented, in *Graphis Packaging*, with very high standards of layout and printing.

This he will find . . . and yet, let's face it, the general effect is disappointing. The publishers have no doubt some justification for claiming that this book is "the first of its kind"; but in the last 20 years or so there have been many books and magazines of very similar kinds. Indeed, serious students of package design will almost certainly have seen a number of the illustrations before (some of the British packs illustrated are pre-war, some obsolete).

Most of the 290 pages of *Graphis Packaging* are pictorial. The text – which is in English, French and German – is set in solid columns of sanserif type, which may please some eyes, but which are unlikely to tempt the casual glancer, ie, the typical lazy Englishman, to read. Perhaps the quality which will give the book special value is its truly international flavour; there are packs from Australia and Japan as well as Britain, the Continent, and North America. The breadth of the contents can well be shown by listing the main groups of packs illustrated which include packs for textiles and clothing, food and sweets, drinks, sports and recreation, cosmetics, 'family ranges' (house style), and record covers.

British designers are unusually well represented in the 'family ranges' section, which supports the view that has often been implied in DESIGN, that house style is taken more seriously, and applied more successfully, here than in most other countries.

Graphis Packaging will look well on any designer's waiting room table. This is in effect an international reference book of good looking packages; and perhaps it is too much to expect that a reference book should also be a source of inspiration and excitement.

ALEC DAVIS

Fluid dynamics

D. E. Rutherford, Oliver and Boyd, 10s 6d

This is one of the first books to make use of Monotype's new four line mathematics setting. This setting does not affect the appearance of the contents (except that Times New Roman is used whereas most mathematics books are in Modern Extended). It is, however, an important technical improvement, which allows quicker typesetting, and therefore greater economy.

BOOKS RECEIVED

English decorative ironwork 1610-1836

John Harris, Alec Tiranti, £2 2s

USSR patents and inventions

Volume 1, Nos 1 and 2, Permagon Press, £3 10s

Categories covered include electrical and mechanical engineering, measuring instruments, the building industry, light and precision engineering, etc.

The carpet annual, 1959-60

British-Continental Trade Press, £1

Creating with paper

Pauline Johnson, Nicholas Kaye Ltd, £2 5s

This month's cover

This month's cover was designed by Hugh Walker, 40. He trained at the LCC Central School of Arts

Hugh Walker

and Crafts and then joined an advertising agency. Since 1953 he has been working as a freelance graphic designer and part-time teacher.

Corrections

DESIGN 133/58: the Swedish mixing jug is made from acrylo-nitrine-styrene, and the lid from polythene.

DESIGN 135/67: F. Haughton Lyle is a senior lecturer in industrial design at Peel Park Technical College, Salford.

DESIGNERS *in this issue*

Robert Austin, RA; J. Beresford-Evans, FSIA; Professor Misha Black, OBE, RDI, MINSTRA, FPSIA; R. A. Bray; Iden Claessen; Derek D'Arcy, DESRCA; Stuart Devlin; Abram Games, OBE, RDI, FSIA; Ashley Havinden, OBE, RDI, FSIA; Jack Howe, FRIBA, FSIA; Maurice Lee; C. S. McDonald; Althea McNish, DESRCA; K. H. Patterson, MSIA; Robert Perritt; Ernest Race, RDI, FPSIA; R. D. Russell, RDI, FSIA; Hans Schleger, RDI, FSIA; Hugh Walker, MSIA (cover); Gerald Whiles; E. G. M. Wilkes, MSIA.

MANUFACTURERS *in this issue*

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The Birmingham Railway Carriage & Wagon Co Ltd, Smethwick 40, Staffs
British Railways London Midland Region, Locomotive Works, Crewe
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Fulford Brown Brothers (1929) Ltd, 6 Regent Parade, Birmingham 1
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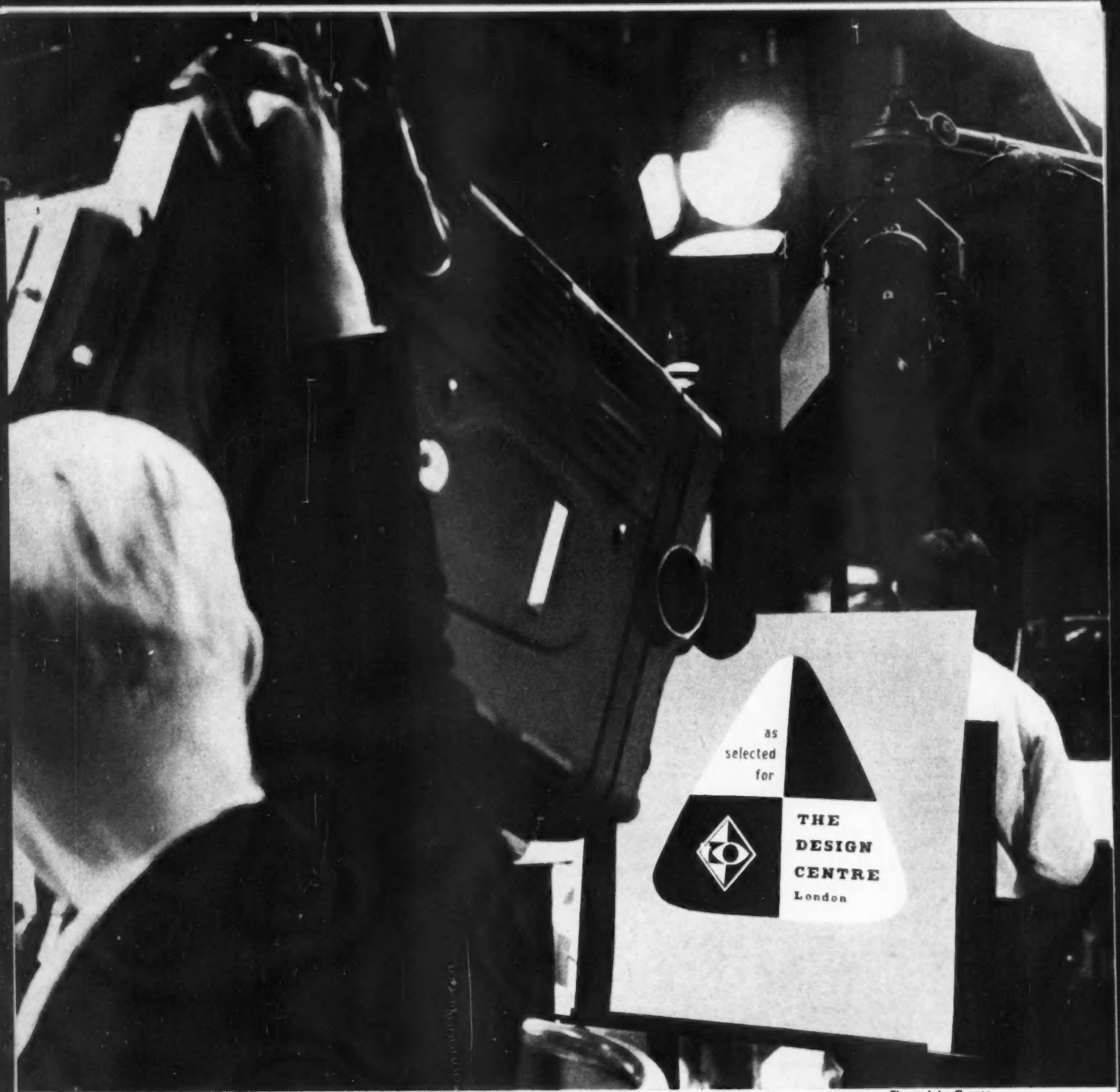

Photo: John Garner

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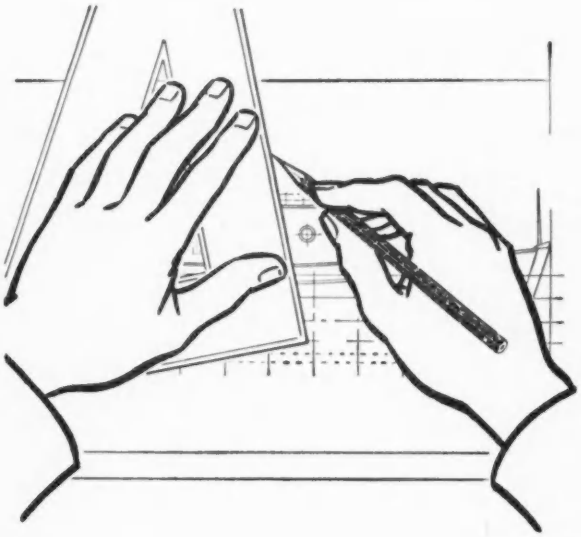
The Design Centre, Haymarket, London SWI



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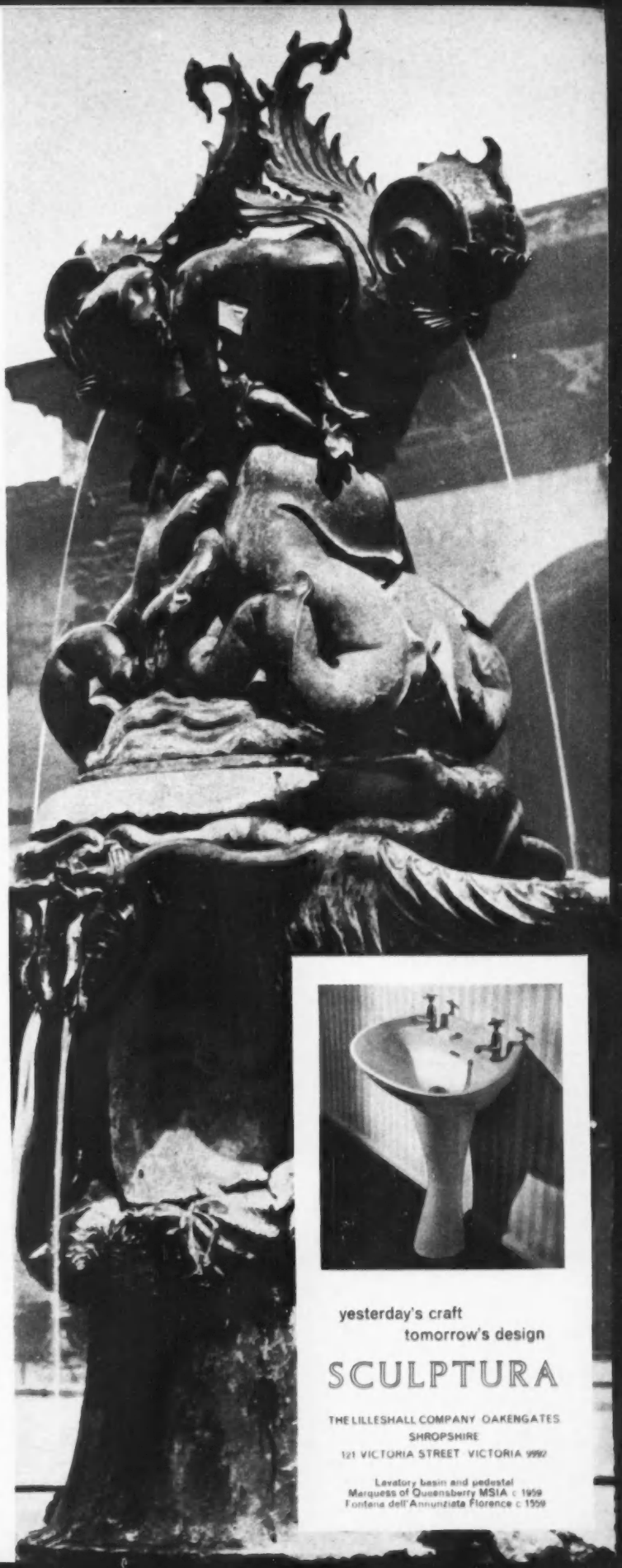

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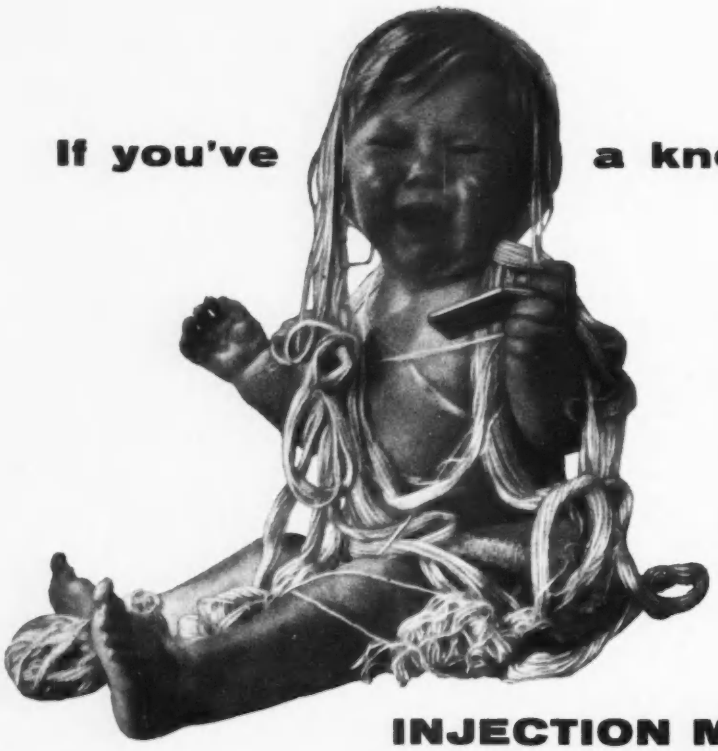

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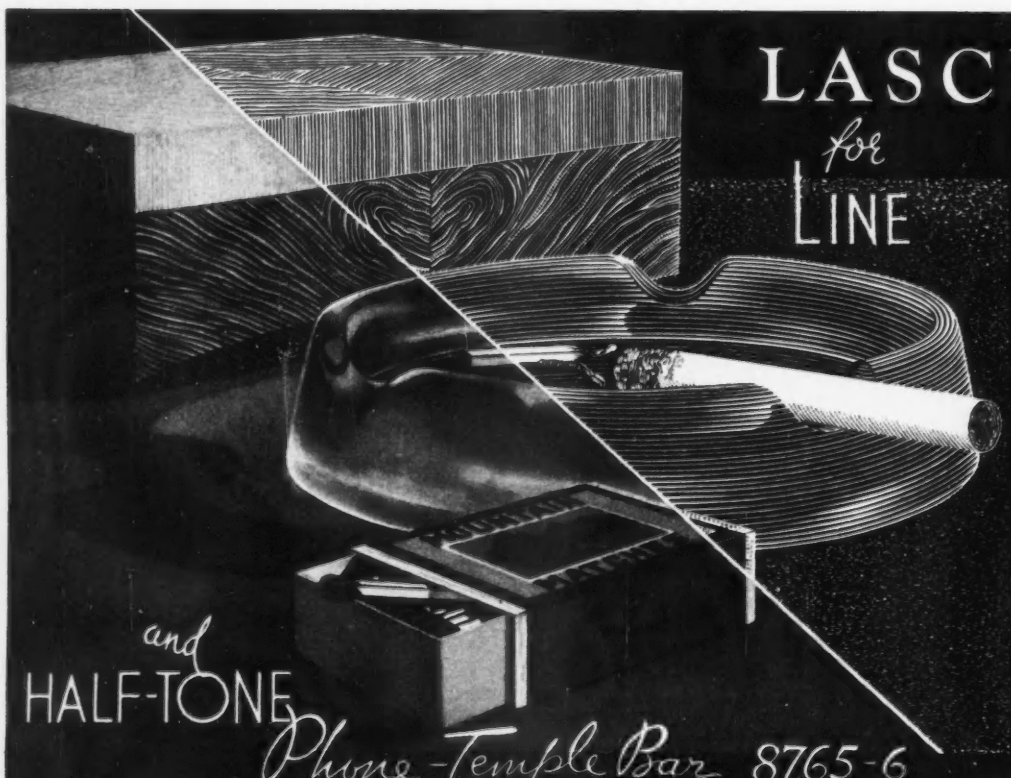

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Where any of these tests are carried out on new products, the whole operation can be executed with absolute security, if this is desired. Packers can have complete anonymity by employing one of several brand names that have been registered especially for this service.

If you would care to have further details of this service, please do not hesitate to ask, irrespective of whether your interest is immediate or not. Your glass container manufacturer will be happy to discuss your problem and to help you in any way. Details of the operation of the scheme have been published, copies of which are available on request.

1 Design Preference Testing

Facilities are available to pretest the appeal and acceptability of new container designs on a consumer panel of 400 households in London, Birmingham, Manchester and Glasgow. From this panel a balanced sample can be drawn to match the known, or probable, consumer market for the product. The panel's reactions to the design will be recorded, analysed and presented to the Packer as a report and recommendation.

2 Container in Use Testing

The consumers' attitude towards the new pack can be carried a step further than ascertaining the appeal of the design only. Any new glass container and the product for which it is designed can be tested in actual home use by the consumer panel. Their experience of how the pack measures up to the requirements of use in the home will be recorded, analysed and presented to the Packer as a report and recommendation.

3 Shelf Testing

The sales appeal of a new design can be tested under actual store conditions. The pack will be placed on the shelves or counters of a number of self-service or other stores in the main centres of population. The speed and volume of off-take will be recorded and analysed by class of store and locality. The packed product can be tested either alone or in competition with any other alternative or existing pack.

4 Area Test Marketing

Because the pack and product testing service is so closely associated with marketing, it was felt that a service which linked the two operations would furnish Packers with a valuable additional service. To this end an expertly staffed marketing service has been established which will plan, organise, and, if desired, execute test market campaigns in their entirety, on behalf of any Packer wishing to launch a new glass packed product.

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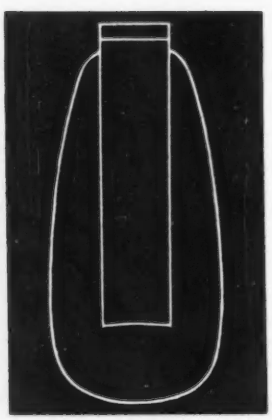

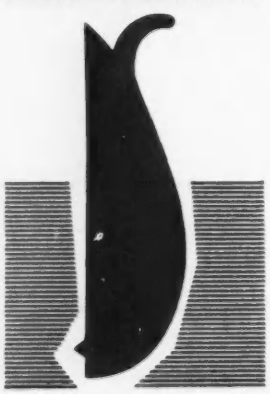

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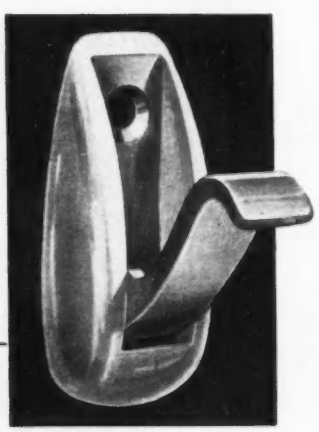

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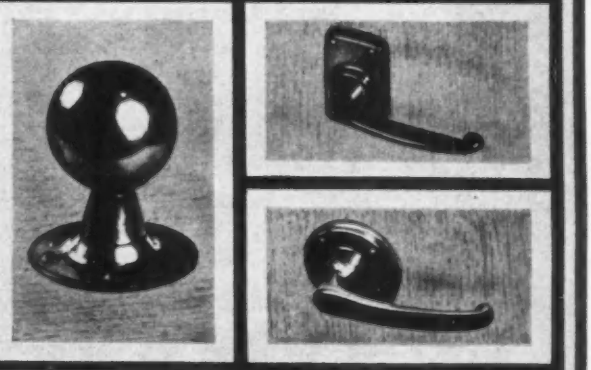

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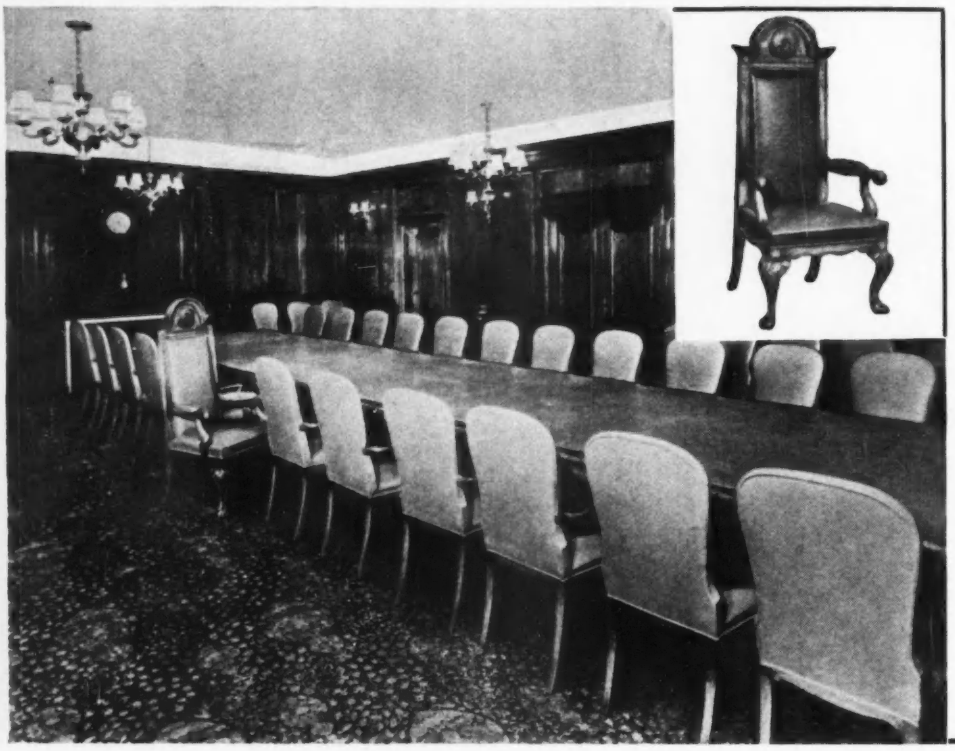

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Forms for admission can be obtained from:

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Contracts: When price and good appearance and performance are vital, specify *Gaymod** strong repp for curtaining, covers, bedspreads and the like. 48 in. wide, vat dyed through and through, 40 colours stocked in London. Available at once, retailing about 11/9 a yard. Should we not have the colour you seek we will dye it. On view at *Gayonnes Ltd.* 22 Grafton Street, (off Bond Street) London W.1.

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ENGLISH ELECTRIC
VALVE COMPANY LTD

◆

Publicity Department Assistant

◆

An assistant to the Chief of the Publicity Department of the Company is required at once.

Publicity experience and a sound knowledge of industrial advertising and preferably an interest in electronics or light electrical engineering.

The Company is expanding rapidly and this position offers a good opportunity to the right man in the age group 27 – 35.

Apply to:
DEPT. C.P.S., MARCONI HOUSE
336/7 STRAND, LONDON WC2
quoting reference D 1597H

FURNITURE MANUFACTURING COMPANY
wishes to appoint a
SALES DIRECTOR

Applications are invited *only* from executives of the highest calibre for this Board appointment.
The advertisers are a medium sized Company employing 100/150 persons, situated in the Manchester Area. The products are polished and kitchen furniture for distribution through mail order and retail channels.
It is proposed to extend and develop the Company and it is in this context that the appointment must be considered. It follows that the ideal candidate will not only be an experienced Sales Manager but will be sensitive to the changing tastes of the public, and therefore able to advise the management as regards development.
The commencing salary, dependent upon experience, is likely to be £2,000 p.a. or over plus the usual ancillary benefits.

Write to Box 429, Design, 28 Haymarket, London SW1

PACKAGING DESIGN STUDIO

Assistant required by Manufacturers and Converters of Transparent Cellulose Film.

Experience in still life half-tone drawings and retouching for gravure reproduction, a high standard of lettering with a good working knowledge of typography in relation to working drawings are essential. Ability to design will be an advantage.

Superannuation Scheme. Five day week. Restaurant facilities. Two weeks paid holiday rising with length of service to three weeks with this years vacation being honoured. Working conditions are excellent in a very congenial atmosphere.

Experienced applicants only should apply in writing to the Head of Design, British Sidac Ltd, 98/124 Brewery Road, N.7, giving full details. Salary will be in accordance with age and experience.

Classified advertisements

Rates: 1s 3d per word (minimum, 20s). Box numbers 1s extra. Copy: Last date for copy is 10th of month preceding date of issue

Situations vacant

THE COUNCIL OF INDUSTRIAL DESIGN
INDUSTRIAL LIAISON OFFICER to deal with the POTTERY, GLASS, SANITARY WARE and CERAMIC TILE industries.
Applications are invited from men between 28 and 45 who have a good general education, an interest in and knowledge of the broad field of design in all its aspects and wide knowledge of several of the above industries gained through responsible experience in buying, selling, production or design, or in another relevant field. An interest in interior furnishings including textiles will be an added advantage. The starting salary will be in the range £1,295 – £1,450, rising to £1,630. There is a pensions scheme. Application forms and further details can be obtained from the Recruitment Officer, CoID, 28 Haymarket, sw1.

THE COUNCIL OF INDUSTRIAL DESIGN
invites applications from men for two posts in the Exhibition Division (A) SENIOR ASSISTANT aged 25 to 35 to assist mainly in the planning, design and erection by contractors of exhibition stands and displays for exhibitions outside the Design Centre, in London, the provinces and occasionally overseas. Essential qualifications are a good general education, a full art school training in a 3-dimensional design subject or an architectural training, and relevant experience including both design and administration. Starting salary between £1,045 – £1,210 according to experience, rising to £1,295. There is a pension scheme and a month's annual leave. (B) JUNIOR ASSISTANT. The duties will be to assist the officer engaged in the work described above. A man aged 21/28 is preferred with similar qualifications but not necessarily with experience. Starting salary between £535 – £725 according to experience, rising to £985. Apply for further details and an application form to the Recruitment Officer, CoID, 28 Haymarket, sw1.

THE DESIGN CENTRE requires a young man to assist in the display section. The qualifications are education with GCE, a recognised display or design training and good practical experience in display. Starting salary £535-£690, rising to £985. Pension scheme and 3½ weeks holiday. Apply for further details and an application form to the Recruitment Officer, CoID, 28 Haymarket, London sw1.

TYPOGRAPHER-DESIGNER required for Publicity Department of light engineering company. The work entails the design and preparation of folders, catalogues and instruction manuals for reproduction in letterpress and litho Telephone Leytonstone 5226 for appointment.

WELL-KNOWN PUBLISHERS and specialist colour printers in North West London require a competent and imaginative graphic designer-typographer, 30 – 35. The position is an important one demanding a capacity for collaboration at a high level and the ability to appreciate and meet technical requirements. Applicants should have a good knowledge of offset lithography and book production, and should be prepared to carry out a varying amount of routine layout work and manuscript preparation. Salary from £1,000 per annum, commensurate with qualifications and experience. Full details to Box 433, Design, 28 Haymarket, sw1.

S. HILLE & CO LTD, Watford require a draughtsman familiar with furniture construction and with experience within the industry. Knowledge of good modern design an advantage. Apply Hille of London Ltd, 39-40 Albemarle St, Piccadilly w1.

ASSISTANT DESIGNER required for Industrial Design Consultants' Office in Edinburgh. Packaging and Display qualifications. Send details to Design and Industrial Styling Company Ltd, 15 Moray Place, Edinburgh 3.

JUNIOR MALE DESIGN ASSISTANT, age 20/25, required for Exhibition and Displays in the Advertising Dept of The National Cash Register Co Ltd. Comprehensive art school training essential. Some knowledge of typography, layout and model making an advantage. Work consists of producing own designs, drawings and specifications under supervision. Salary according to experience and qualifications. Bonus and Pension Plans. Please write to us, Personnel Manager, 206-216 Marylebone Road, London NW1.

TEXTILE OR WALLPAPER Designer with practical experience wanted. Write Frank Designs, 48 Neeld Crescent, London NW4.

Shropshire Education Committee
SHREWSBURY TECHNICAL COLLEGE AND SCHOOL OF ART
Principal: L. B. Daley, MA, BSC (*Econ*) (HONS), AMBIM, FCCS
Head of School of Art: A. W. H. Pears, ATD
Assistant Grade B for Commercial Design and Lithography. Commerical experience desirable. Salary, Burnham Technical, £700 to £1,150 with placing on scale for approved experience and appropriate additions for training and graduate qualifications. Forms of application (returnable within 10 days of advertisement) and further particulars from Principal.

DESIGNER DRAUGHTSMEN for interior decoration and furniture studio. Senior and junior required with experience in preparation of designs and execution of perspective drawings of shipping and general contract work. Apply Waring & Gillow, 180 Oxford St, w1.

ROBIN DAY requires draughtsman with experience of furniture, interior and exhibition design. Telephone FLA 1455 or box 431 Design, 28 Haymarket, sw1.

Manchester Education Committee
REGIONAL COLLEGE OF ART
Applications are invited for the following (1) Lecturer in the School of Industrial Design to teach all aspects of three dimensional design, including basic design theory, to NDD and Post-Diploma level. Some industrial experience desirable. (2) Assistant Grade 'B' in the School of Graphic Design to teach typographic design and lettering to NDD level in Commercial Design and Book Illustration. Salaries in accordance with the Burnham Further Education Report, 1959, for post (1) Lecturers scale (men) £1,370 × £35 – £1,550, (women) £1,100 × £28 – £1,240 plus equal pay increments; for post (2) Assistants scale Grade B (men) £700 × £27 10s – £1,150, (women) £630 × £22 – £920, plus equal pay increments. Forms and particulars (sae) from Chief Education Officer, P.O. Box 480, Manchester 3, returnable as soon as possible.

LCC CENTRAL SCHOOL OF ARTS AND CRAFTS
Southampton Row, London wc1
Required: September 1960 senior lecturer for Department of Industrial Design (Engineering). Considerable practical experience as designer and ability to give instruction to advanced students to highest level essential. Will also be responsible to head of department for general supervision. Salary scale: £1,550 × £50 to £1,750 plus London Allowance £38 or £51. Possible entry above minimum if justified by experience and present position. Application forms from Secretary at College – to be returned within two weeks (653).

classified advertisements continued on page 88

Record of Designers

Free standing litter bin: the body and foot are in sheet steel with stove enamel finish (the body is yellow and the foot black). The two galvanised wire baskets are removable; the lid swings on a pivot from side to side, and automatically retains the central position by a counterweight. The litter bin was designed for National Benzole Co Ltd by David Mellor, who was recommended to the firm by the CoID's Record of Designers.

Manufacturers and others wanting design consultants or staff designers can apply for a short list (requirements must be stated in some detail) to the Record of Designers, CoID, 28 Haymarket, London sw1, or to the CoID Scottish Committee, 46 West George Street, Glasgow c2

CLASSIFIED

advertisements continued from page 87

Kingston Upon Hull Education Committee
REGIONAL COLLEGE OF ART AND CRAFTS
Principal: A. D. S. Sugden, ARE, ARCA, FIBD
Applications are invited for the following post, duties to commence in September 1960. SCHOOL OF INDUSTRIAL DESIGN. Assistant (Grade B) for display and exhibition design to NDD Special level and interior decoration to Intermediate and Final standard in the School of Architecture. Salary: Burnham Technical Scale – £700 × £27 10s – £112 10s × £37 10s – £1,150 for men, and corresponding scale for women with appropriate equal pay increments. (Increments will be paid in respect of suitable teaching, professional and/or industrial experience, plus additions for training and graduate qualifications. Further particulars and application forms, to be returned as soon as possible, may be obtained from the Chief Education Officer, Guildhall, Kingston-upon-Hull.

INDUSTRIAL DESIGNER, preferably experienced in automotive and general transportation industries, required by Consultants to develop aircraft furnishings and product design accounts. Applicant should have basic design ability along with knowledge of materials and manufacturing processes gained from experience in industry. Reply with details to Box 436, DESIGN, 28 Haymarket, London sw1.

DESIGNER DRAUGHTSMAN, young, required by well-known lighting firm, to develop new designs of decorative and commercial lines. Reply, stating age, salary required, and experience to Box 427 DESIGN, 28 Haymarket, London sw1.

Situations wanted

DOBBY AND JACQUARD qualified and experienced textile designer seeks part or full-time post. Box 432, Design, 28 Haymarket, sw1.

Shipping and packing

INTENDING EXHIBITORS at European Fairs should contact Davies Turner & Co Ltd, 4 Lower Belgrave Street, London sw1, SLOANE 3455, for details of DIRECT ROAD SERVICE.

Prototypes and model making

METAL–WIRE–TUBULAR WORK. Let us manufacture your prototypes and/or production runs. Holborn Metal Works, 334 Upper Street, London N1. CAN 8042.

RICHARD DENDY & ASSOCIATES welcome your enquiries for architectural, engineering, experimental and ship models; production runs of advertising units in rubber, plastics, wood or metal; prototypes in all materials; giant exhibition and carnival displays. 4, 5 and 6 Seaton Place, Hampstead Road, London NW1. EUSTON 7617 and 1981.

WESTWAY MODELS LIMITED–the largest model-making organisation in the United Kingdom specialising in models for display, exhibition, product design and prototype-development. 178 Brent Crescent, London NW10. Telephone ELGAR 3267-8.

MASTERMODELS LTD, cater for the needs of those who require quality, service, and delivery in the following field – scale models for display and technical sales, industrial prototypes large or small, precision and general pattern making, Keller models, vacuum forming and tools, Greenhill Crescent, Harrow, Middlesex, HARROW 2428.

Printing and publications

KINGS NORTON PRESS (1947) LTD. Fine colour Printers have installed yet another Precision Letterpress Printing Machine to meet increasing demands. Our design service is available for submission of ideas, for Leaflets, Brochures and Catalogues, either by Letterpress or Litho. Specimens available from, Factory – Kings Norton, Birmingham 30. Telephone: KINGS Norton 2262. London Office – Stuart House, 1 Tudor Street, London EC4. Tel: FLEET Street 1379.

Commissions and contracts wanted

DESIGN/DEVELOPMENT An idea is one thing – developing it to the production stage is quite another! Our experience in all production techniques in metals and plastics, supported by our design and prototype facilities, enables us to offer a first class service in this field. R. J. Emery and Company, Studio Two, Brownfields, Welwyn Garden City, Herts. Tel Welwyn Garden 6500 and 4720.

DESIGNER, MSIA, Interiors/Shops/Exhibitions, seeks association with design group or industrial organisation. Experienced all phases from client's brief to site supervision. Box 430, Design, 28 Haymarket, sw1.

CREATIVE PHOTOGRAPHY for advertising etc. Specialist in still life. Michael E. Ware, ARPS, Studio 750. 46d Surbiton Road, Kinston. KIN 0604.

GEORGE HOY for FINISHED LETTERING and TYPOGRAPHY – fifteen years experience with top agencies. 15 New Row, London WC1. TEMPLE Bar 6022.

LONDON DESIGN OFFICE offers prompt service to your requirements in INDUSTRIAL INTERIOR DESIGN. Box 435 DESIGN, 28 Haymarket, London sw1.

PACKAGE DESIGN from a small and dedicated group helps build a complete image of your product. John Cox, MSIA, at Brand Image Limited, 30 Welbeck Street, London w1. HUNTER 2586.

Photography

CREATIVE DESIGN GROUP seek commissions to undertake graphic and product designs. Box 434, Design, 28 Haymarket, sw1.

Miscellaneous

AEROFOAM can supply made-to-measure Dunlopillo latex foam seat panels covered in any material to fit on your frames – or loose cushions covered or uncovered – or just the Dunlopillo – or even just the advice – or bench seating anywhere. Aerofoam Ltd, 19-27 Cricklewood Bdy, NW2. GLA 9844.

DESIGNER NEEDS office and workshop. Prepared to consider shop premises. Anywhere in the North London area. Any information at all will be welcome. Kenneth Grange FSIA. MOU 5046.

PICTURE FRAMES of all types made. The largest stock in London. Rowley, 86-87 Campden Street, Kensington. Telephone PARK 4349.

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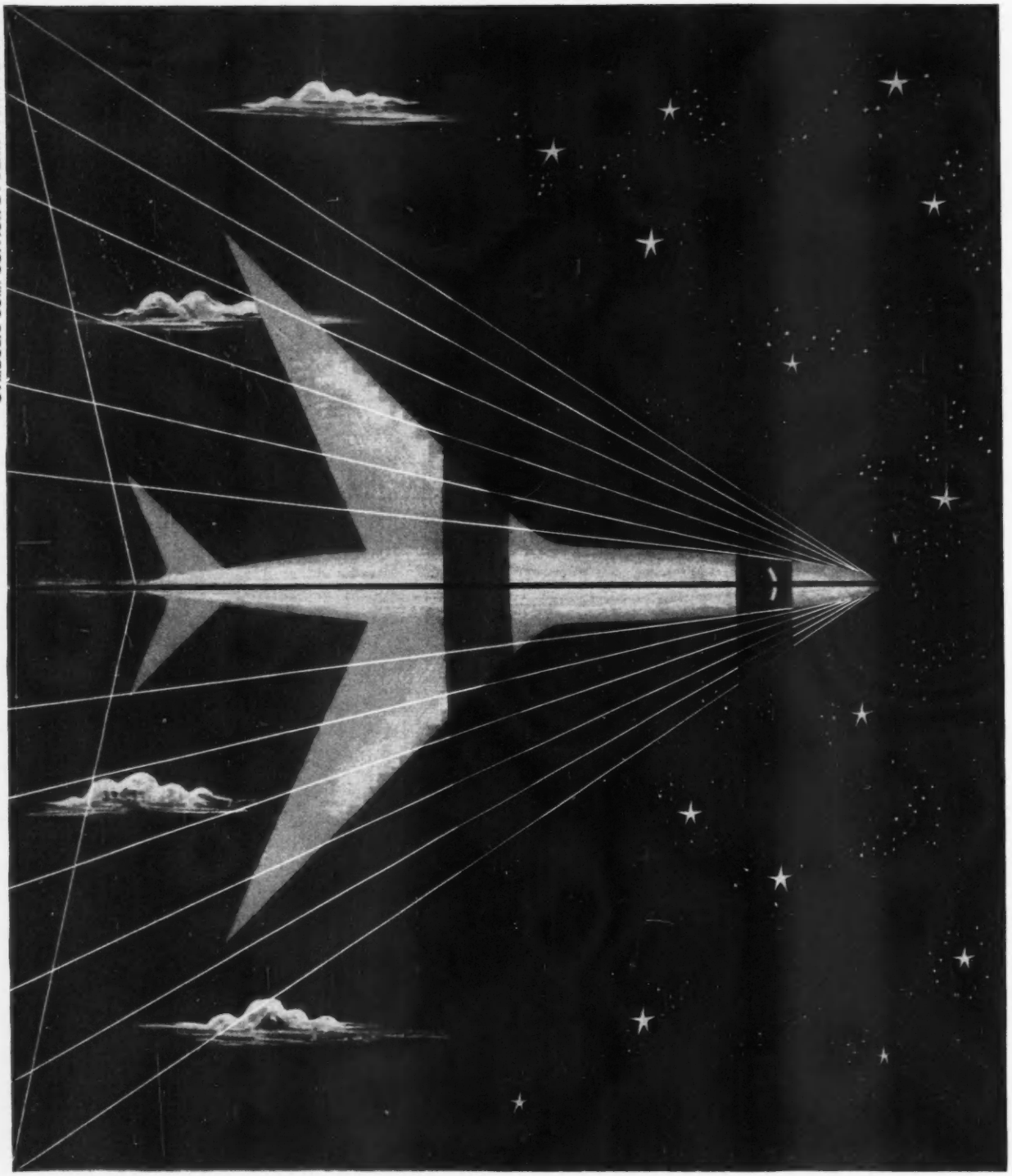

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